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THE DEVELOPMENT AND IMPACT OF COMMAND AND MANAGEMENT BY SYSTEM WITHIN THE MARINE CORPS

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CHAPTER I

INTRODUCTION

In late 1963, at a press conference with the newly appointed Commandant of the Marine Corps, General Wallace M. Greene, Jr., reporters were surprised when he spoke on the Marine Corps of the future. He suggested that by the late 1970's, Marines might be rocketing to trouble spots in faraway lands in a matter of minutes. The public, and Marines, were equally surprised. The image of the Marine Corps is one of burly Marines assaulting enemy beaches. The modern Corps, however, is a highly complex organization of men and equipment organized into both air and ground fighting forces.

The Marine Corps will function only so well as its management processes sustain it. Added to the traditional ones, there has been, during the last several years, a proliferation of automated systems. From a beginning with one computer in 1958, the Marine Corps now employs over forty computers and almost two thousand people in automated systems. Clearly, these systems are having major impact upon the Corps.

Nineteen major systems have evolved, although the exact number is debatable because of the interrelationships that exist

between the various systems. This study addresses itself to the development of these nineteen systems and the integrated system for their management.

The major questions to be answered are why the Marine Corps has developed so many systems, and what their impact appears to be on the Corps as an organization. In answering these questions, each system is examined from the viewpoint of why it was developed and of how it contributes to the overall management process. No effort has been made to involve the reader in the technical aspect of designing advanced data processing systems. Emphasis, however, has been placed on the developmental stage since the majority of the systems are in that stage.

Closely allied to the primary questions are subsidiary questions. Whether the systems were developed because of need or by reaction to outside pressure will be examined for each system. Attention will be focused on the meaning attached to the classification of various systems. The various organizational procedures used in the systems development effort will also be examined to determine their impact on the Marine headquarters.

In conducting this study it was first necessary to survey and analyze the literature in the fields of management and data processing to develop a framework in which to view systems development. Many different points of view were encountered because of the extensiveness of the literature and the partisan attitudes of the

contributors.[1] Nonetheless, sufficient commonality existed to provide a point of reference.

Information about the systems was obtained through examination of directives and files of the Marine Corps and through interview with staff officers at the headquarters. Over fifty officers were interviewed. Many informal discussions with various other staff members also contributed valuable information. Of those interviewed, only eighteen have been cited in this study. Their information was more germane or else adequately summarized information obtained from the other sources. The interviews and informal discussions also provided a degree of insight into the dynamic nature of the Marine Corps systems effort. Recognition of this dynamic effort provided the realization that in dealing with a complex organization any study conducted of it is only valid for one point in time. Thereafter, what was a problem has been solved only to be replaced by others. Because of this, specific solutions to problems were not sought. Instead, effort has been directed towards more clearly identifying the areas of possible change.

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[1]Managers, data processing specialists, behavioral scientists, etc.

CHAPTER II

BACKGROUND

The Marine Corps--A Service

"The three services" is a phrase used freely in and out of government. If a Marine is present he is usually quick to rise to correct the error. The status of the Marine Corps is one of the facets of the Department of Defense most frequently misunderstood.

The Marine Corps claims as its birth the resolution of the Continental Congress on November 10, 1775, authorizing the formation of two battalions of Marines. But it was not until July 11, 1798 that "an Act for the Establishment and Organizing of a Marine Corps"[1] created a separate corps of Marines as a military service. Later, the Congress passed the Act of June 30, 1834, entitled "An Act for the Better Organization of the Marine Corps."[2] This act carried forward the separate status of the Marine Corps and placed it firmly within the "Naval Establishment."[3]

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[1]U. S., Statutes at Large, I, p. 594.

[2]Ibid., IV, p. 712.

[3]The term "Naval Establishment" is synonymous with "Department of the Navy" and embraces all activities committed to the care of the Secretary of the Navy. Neither term should be confused with "Navy Department," which refers to the central executive offices and bureaus located at the seat of government.

The National Security Act of 1947, as amended,[1] provided for the Department of Defense to be composed of three military departments and four services, all under the coordination and direction of the Secretary of Defense. This act reaffirmed the status of the Marine Corps as a separate service within the Department of the Navy. This status has also been affirmed and the relationships involved clarified by the Secretary of the Navy.[2]

Concern with the status of the Marine Corps has had a continuing influence on the thinking of Marine Corps officers.[3] Even though legal status has been repeatedly reaffirmed in legislation, the long battle has created scars or biases.[4] It is not the purpose of this paper to trace the evolution of the legal status of the Marine Corps; but recognition of this influence is important to understanding the Marine Corps and how it functions.

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[1]National Security Act of 1947, Public Law 253, 80th Congress, as amended by Public Law 36, 81st Congress and Public Law 216, 81st Congress (1949).

[2]See Department of the Navy, Assignment and Distribution of Authority and Responsibility for the Administration of the Department of the Navy, General Order No. 5 (Washington: November 20, 1965), paragraph 11.

[3]An example of this concern is contained in the Senate Report, 84th Congress, 2nd Session, Report No. 2484, July 9, 1956 on Revision of Title 10, United States Code entitled "Armed Forces" and Title 32, United States Code "National Guard."

[4]The battle for survival and status is dealt with in considerable detail by Colonel R. D. Heinl, USMC, in Soldiers of the Sea (Annapolis, Md.: U. S. Naval Institute, 1962).

The Marine Corps--A Force-in-Readiness

The Marine Corps as a "force-in-readiness" began when the first Marine was recruited at Tun Tavern in Philadelphia after the 1775 resolution of the Continental Congress. Less than a year after being formed Marines executed their first amphibious landing on the British island of New Providence in the Bahamas and captured munitions for the Continental Army. Throughout the Revolution, Marines served with distinction.

Recreated in 1798 the Corps served aboard ships during the quasi-war with France. In 1805, Marines seized the fortress of Derna, Tripoli from the Barbary Pirates and the Stars and Stripes were hoisted over territory in the Old World for the first time. They were on practically every American warship in the War of 1812, and fought ashore in the Battle of Bladensburg in 1814, and with Jackson in the Battle of New Orleans. In 1837, the Marines fought in the Seminole Wars and in 1847 they seized Chapultapec, the "Halls of Montezumas."

With Perry in the opening of Japan, one-sixth of the Corps was first to land--six officers and 200 men! Then there were landings at Shanghai and Canton.

Prior to the Civil War, Marines captured John Brown at Harper's Ferry while under the command of Robert E. Lee. Though split during the Civil War, U. S. Marines participated in twenty-eight major land and naval battles.

In the years following, Marines landed to protect American lives and property in over sixteen different countries. The Corps continued to distinguish itself in the Spanish-American War, Boxer Rebellion, Vera Cruz, Haiti, and Santo Domingo, Korea, Nicaragua.

During World War I, Marines served with the Army. German intelligence classified them as "storm troops," their highest classification, and the German troops called them "devil dogs." France named a forest for them and awarded them the Croix-de-Guerre three times.

Following World War I, Marines performed a number of domestic chores. They guarded the banks and mails after a crime wave broke out. The crime wave ended. At the same time they served in Nicaragua and China.

World War II found the Marines organized and ready. The first counteroffensive against Japan was launched by the Marines at Guadalcanal. Guadalcanal demonstrated readiness but amphibious virtuosity was shown as the Marines advanced across the Pacific making Tarawa, Eniwetok, Peleliu, Iwo Jima, Okinawa and many others, that were only specks on a map, household words.

In 1939, the strength of the Marine Corps was slightly over 19,000. By the start of World War II it had grown to 65,000, and by the end there were approximately 500,000 Marines. By 1950, however, the Corps had been reduced to a strength of 75,000. The Chairman of the Joint Chiefs of Staff had publicly predicted that

large scale amphibious operations were a thing of the past.

Then the communists poured across the 38th parallel in Korea. General MacArthur, faced with a catastrophe, called for Marines to assist the Army. As soon as shipping was assembled, a Marine brigade, which was ready, sailed. New pages of glory were added to the Marine's history by the Pusan Fire Brigade, as well as by the Inchon landing and the remarkable "attack in another direction" from the Chosin Reservoir.

The war in Korea ended but the Marines were kept busy in such places as Lebanon, Suez Canal, Formosa, and Cuba. Then came the Dominican Republic and Vietnam. In Vietnam the first major victory (Operation Starlight) was the result of a Marine amphibious landing.

Years of being prepared has found the Marine Corps participating in over 300 battles in its 191 years. These years have given the Marine Corps a heritage and the power of pride in tradition has immense strength in unifying a fighting force. This pride and belief in their Corps as the nation's primary force-in-readiness is one of the inner driving forces of Marines.

Mission

The Marine Corps has the mission of seizure and defense of advanced naval bases, as well as land operations incident to naval campaigns, and ". . . such other duties as the President may

direct."[1] In addition, it has the responsibility for development of amphibious warfare doctrine, the security of naval installations, the providing of detachments for duty on naval vessels, and other related missions.[2]

Organization

The Marine Corps is composed of three Marine divisions, three air wings, a supporting establishment, a reserve, and a headquarters.[3] Its strength today is approximately 290,000. Figure 1 shows the basic structure of the Marine Corps.

Headquarters, U. S. Marine Corps is established to assist and advise the Commandant of the Marine Corps in discharging his responsibilities.

The Operating Forces fall into three categories: Marine Corps Operating Forces assigned to the Operating Forces of the Navy, or to unified commands; Security Forces assigned to shore activities of the Naval Establishment; and the forces not otherwise assigned, such as State Department security guards, etc. Marine

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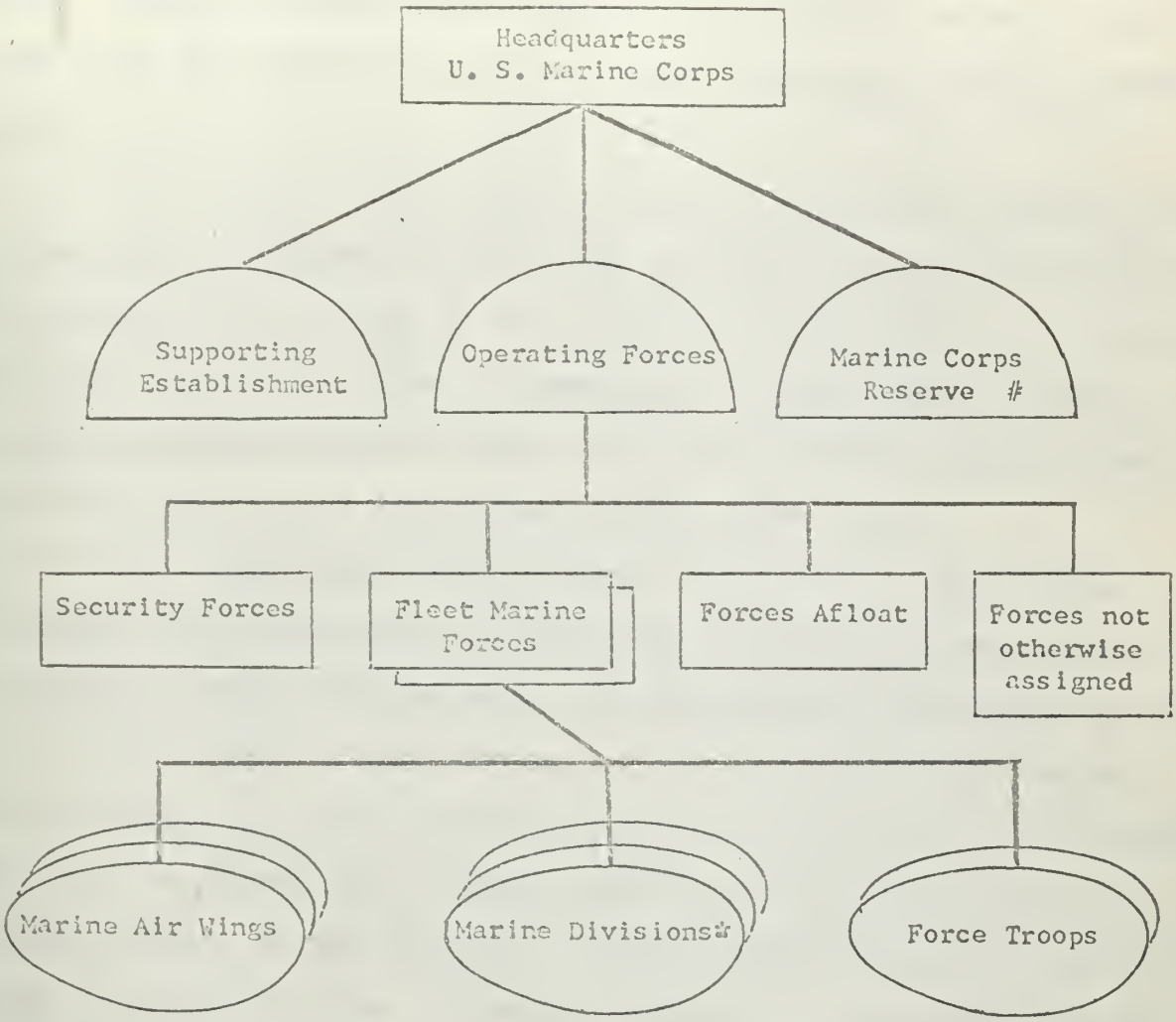
[1]National Security Act, 1947, Section 206(c).

[2]For detailed statement of functions see Joint Chiefs of Staff Unified Action Armed Forces (UNAAF), JCS Pub. 2 (Washington, D. C.: Department of Defense, 1959), pp. 23-24.

[3]National Security Act, 1947, Section 206(c).



* A fourth Marine Division has been authorized for the Vietnam crisis.

\# The Marine Corps Reserve is organized into a Marine Division/Wing Team.

Fig. 1.--Marine Corps Organization

Corps Operating Forces assigned to the Operating Forces of the Navy fall into two categories: Fleet Marine Forces and Ship's Detachments.

The Marine Corps Reserve exists to provide a trained force of qualified officers and enlisted personnel immediately available for active duty in time of war or national emergency. It provides the "slack time" in terms of personnel and equipment to meet mobilization requirement during the period needed for the recruitment and training of additional Marine Corps units.

The Supporting Establishment provides the facilities necessary for recruiting and training personnel, maintenance of equipment, supply and schools. It supports the Operating Forces.

The Fleet Marine Forces, or FMF, constitute the bulk of Marines assigned to the Operating Forces of the Navy. The Atlantic and Pacific Fleets both include Fleet Marine Forces, which are integral parts of the fleets. A Fleet Marine Force is a balanced force of combined arms, including aviation. It consists of one or more divisions, one or more air wings, and a force troops containing artillery, engineers, armor, motor transport, service and numerous specialized units to reinforce or support the Marine divisions. The FMF's are organized, trained and equipped to carry out the primary missions of the Marine Corps.

Headquarters, U. S. Marine Corps

No effort will be made to trace the evolution of the headquarters staff organization; nor will an attempt be made to explain the theory under which it is organized.[1] As one writer has said, "one can nowhere find a statement of the theory under which Headquarters, Marine Corps is organized. The reason for this is, of course, that the structure that has been adopted has no supporting theory."[2]

Others have explained the organization as

> . . . a composite of three types of organizations: a functionally organized policy and planning staff; an administrative staff, also organized functionally; and, a major component staff made up of agencies combining planning and administration for major segments of the Marine Corps.[3]

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[1]For a history of the evolution and an analysis of Headquarters, U. S. Marine Corps see Kenneth W. Condit and Major John H. Johnstone, USMC, A Brief History of Marine Corps Staff Organization, Marine Corps Historical Reference Series, Number 25 (Washington: Historical Branch, G-3 Division, Headquarters, U. S. Marine Corps, 1963); Leo J. Scolforo, Jr., "The Organization of Headquarters, U. S. Marine Corps," (Unpublished master's thesis, School of Government, Business and International Affairs, The George Washington University, 1965); and Colonel W. T. Bigger, USMC, "The Structural Organization of Headquarters, U. S. Marine Corps, for Planning, Programing and Budgeting," (Unpublished thesis, Industrial College of the Armed Forces, Washington, D. C., 1959).

[2]Scolforo, op. cit., p. 57.

[3]Condit and Johnstone, op. cit., p. 33.

Regardless of its evolution or the underlying theory behind it, its current structure is the basis from which it must cope with the future.

The Headquarters consists of the immediate office of the Commandant, the immediate office of the Chief of Staff, offices of four Deputy Chiefs of Staff, six staff assistants, eleven divisions, two departments, the Marine Corps Command Center, and various boards and committees.[1] Figure 2 shows the staff organization.

Immediate Office of the Commandant

The Commandant of the Marine Corps is directly responsible as a command assistant to the Secretary of the Navy for the readiness, administration, discipline, internal organization, training, supply, efficiency, and total performance of the Marine Corps. He commands all Marine forces and activities except those assigned to the operating forces of the Navy. Basically, he has two major responsibilities. First, he must secure the necessary men, money and material to enable the Marine Corps to perform its missions. Secondly, he must provide the direction and control necessary for the effective utilization of these resources by the field commanders to ensure combat readiness. A detailed statement of his duties and responsibilities is presented in Appendix I.

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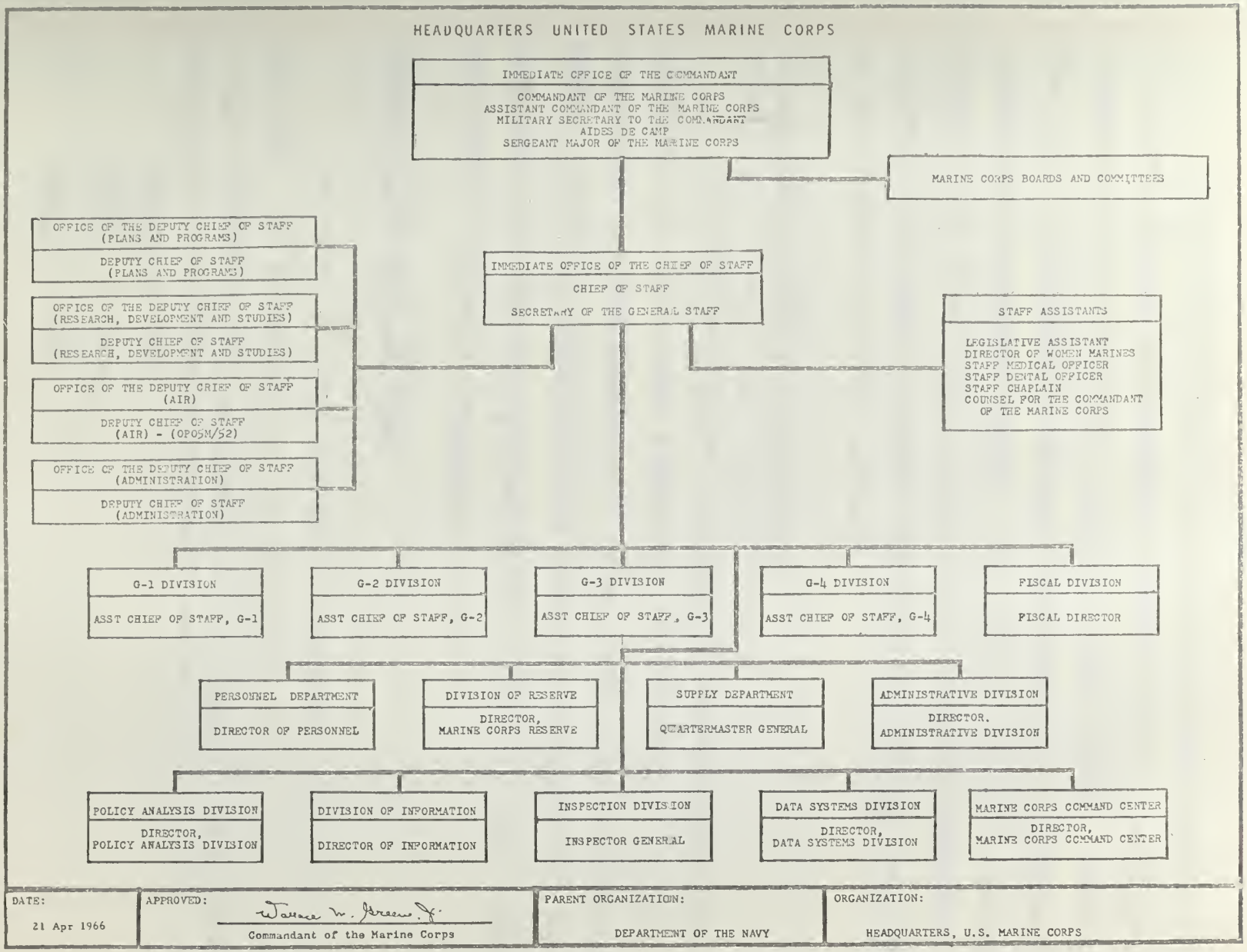
[1]Headquarters, U. S. Marine Corps, Headquarters Manual Volume II, Headquarters Order P5000.3A (Washington: April, 1966).



Extracted from Headquarters Order P5000.3A, Headquarters Manual, Volume II

Fig. 2.--Organization of Headquarters, U. S. Marine Corps

The Assistant Commandant takes over the duties of the Commandant in case of absence or disability and performs such functions as the Commandant may specifically direct. The Military Secretary is responsible for the organization and function of the Commandant's immediate office. The Sergeant Major of the Marine Corps is the senior enlisted man. He advises the Commandant in matters pertaining to enlisted personnel and assists the Commandant in the performance of his duties.[1]

Marine Corps Boards and Committees

The Permanent Marine Corps Uniform Board advises the Commandant on all matters pertaining to uniforms and uniform regulations for all personnel.[2] Other boards such as promotion boards and various committees are formed periodically for special purposes. They may be made responsible directly to the Commandant or to other members of the staff.

Office of the Chief of Staff

The Chief of Staff directs, coordinates, and supervises the staff. He is assisted by the Secretary of the General Staff in the coordination and management of the staff.[3] The Secretary

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[1] Ibid., p. 1-5.

[2] Ibid., p. 1-29.

[3] Ibid., p. 1-5.

[illegible] [illegible] [illegible] [

of the General Staff supervises the administrative function of the Immediate Office of the Chief of Staff.[1] Though not shown in Figure 2, a Special Projects Officer is also provided to the Chief of Staff.[2] He assists in coordinating activities concerned with preparation of briefing folders for trips and appearances of the Commandant, Assistant Commandant, Chief of Staff, and other Department of Defense officials for trips outside the Washington area.

It is of interest to note that the Chief of Staff has twenty-four different staff elements reporting to him. To assist in coping with such a span of management, four assistants are provided.

Offices of Deputy Chiefs of Staff

Four Deputy Chiefs of Staff are responsible for assisting the Chief of Staff in directing, coordinating, and supervising staff activities in specific areas and in performing such other duties that the Chief of Staff may specifically direct.

Plans and Programs

The Deputy Chief of Staff (Plans and Programs) coordinates staff action in matters pertaining to Joint Chiefs of Staff

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[1] Ibid.

[2] Ibid., p. 1-6.

[illegible]

[illegible]

[illegible]

participation and serves as the Operations Deputy for the Marine Corps with respect to the Joint Chiefs of Staff. He assists the Chief of Staff in the areas of planning, programming, budgeting.[1] He has two primary assistants. They are Assistant Deputy Chiefs of Staff. One for plans directly assists in the area of planning and in coordinating the staff activities relative to Joint Chiefs of Staff participation.[2] He also has the collateral job of being the Director of the Joint Planning Group. This group is responsible for staff assistance in the areas of joint strategic plans and studies, current and future strategy, recommendations on political military matters and commands established by the President.[3] The other deputy for programs provides direct assistance in the directing, coordinating and supervising activities regarding programming, financial matters and in the development of information systems.[4]

Research, Development and Studies

The Deputy Chief of Staff (Research, Development and Studies) assists in directing, coordinating and supervising staff activities in research, development, test and evaluation. He coordinates the Marine Corps study program. He also has two

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[1] Ibid., p. 1-9.

[2] Ibid., p. 1-10.

[3] Ibid., p. 1-11.

[4] Ibid., p. 1-10.

[illegible]

[illegible]

[illegible]

[illegible]

assistant deputies; one for research and development and one for studies.[1]

Air

All matters pertaining to equipping, manning, training, organizing and supporting Marine Corps aviation units and installations are under the Deputy Chief of Staff (Air). He also performs duties concerning Marine Corps aviation matters for the Chief of Naval Operations.[2]

Administration

The Deputy Chief of Staff (Administration) is charged with directing and coordinating staff activity in the field of administration.[3] In addition, he serves as the Director, Management Analysis Group.[4] This group was established initially to function under the Deputy Chief of Staff (Programs) but on January 1, 1967 was placed as a staff element in the Office of the Chief of Staff.[5] The responsibilities of this group are to provide direct support to the Chief of Staff through the analysis and presentation of problems

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[1] Ibid., p. 1-16.

[2] Ibid., p. 1-19.

[3] Headquarters, U. S. Marine Corps, Missions/Functions Assigned DC/S (Administration), Headquarters Bulletin 5000, September 1, 1966.

[4] Headquarters, U. S. Marine Corps, Establishment of Management Analysis Group, Office of the Chief of Staff, Headquarters Order 5401.1, August 31, 1966.

[5] Ibid.

in the interfaces of military management systems; isolation and examination of information overlaps or insufficiencies in functional area operating systems; assessment of external information system requirements and the Marine Corps capability to respond; and to represent the Marine Corps to external activities as required to accomplish the other missions.[1]

Divisions and Departments

The G-1 Division, headed by a general officer, the Assistant Chief of Staff, G-1, formulates plans and policies for manpower management and personnel matters necessary to implement the Commandant's policies and decisions.[2]

The G-2 Division, headed by the Assistant Chief of Staff, G-2, is responsible for plans and policies regarding all types of intelligence matters and electronic warfare.[3]

The G-3 Division, headed by a general officer, the Assistant Chief of Staff, G-3, formulates plans and policies regarding training and operations of Marine Corps ground units, marksmanship training, historical records and the civic action program.[4]

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[1] Ibid.

[2] Hq. USMC, Headquarters Manual, p. 2-3.

[3] Ibid., p. 3-3.

[4] Ibid., p. 4-3.

The G-4 Division, headed by a general officer, the Assistant Chief of Staff, G-4, formulates plans and policies for logistics matters to include supply, evacuation, transportation, construction, maintenance, embarkation, allowance and replacement factors, and the development of equipment.[1]

The Fiscal Division is headed by a civilian who is assisted by a general officer. The Fiscal Director is responsible for fiscal policies, budget preparation, and disbursement functions.[2]

The Personnel Department, headed by a general officer, the Director of Personnel, is responsible for procurement, administration, distribution, promotion, etc. of personnel; maintenance of personnel records; and for coordinating the data requirements from the Personnel Accounting System.[3]

The Division of Reserve under the Director, Marine Corps Reserve, a general officer, is responsible for plans and policies for the organization, training and administration of the Marine Corps Reserve.[4]

The Supply Department, headed by the Quartermaster General, is responsible for the operation and management of the Marine Corps Supply System; all matters pertaining to facilities under the Commandant's management control; and is the Marine Corps Stock Fund manager.[5]

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[1] Ibid., p. 5-3.

[2] Ibid., p. 6-3.

[3] Ibid., p. 7-1.

[4] Ibid., p. 8-1.

[5] Ibid., p. 12-1.

The [illegible] Center is a general military [illegible] [illegible] [illegible]

The Administrative Division under its Director is responsible for administrative and management services in support of the headquarters and for providing support to field commands in the areas of management engineering, industrial relations and publications and printing.[1]

The Division of Information under its Director is responsible for Marine Corps public information policies and programs.[2]

The Inspection Division under the Inspector General conducts inspections, investigations, and audits of nonappropriated funds.[3]

The Data Systems Division under its Director is responsible for matters pertaining to automatic data processing equipment and systems and the operations of such equipment within the headquarters.[4]

The Policy Analysis Division under its Director maintains continuous examination of current or projected policies to provide continuity, coordination, and timeliness. This division also assists in writing speeches for the Commandant.[5]

The Marine Corps Command Center under its Director provides a command center for the Commandant as part of the World Wide Military Command and Control System.[6]

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[1] Ibid., p. 10-1.
[2] Ibid., p. 12-1.
[3] Ibid., p. 13-1.
[4] Ibid., p. 14-1.
[5] Ibid., p. 11-1.
[6] Ibid., p. 15-1.

A detailed statement of the missions of the various departments and divisions is contained in Appendix II.

Staff Assistants

The responsibilities of the Director Women Marines, Staff Medical Officer, Staff Dental Officer, and Staff Chaplain consist of advising the Commandant in their areas of professional competence.[1] The Legislative Assistant to the Commandant provides advice on legislative matters and coordinates the preparation of the Marine Corps position on bills and legislative proposals.[2] The Counsel for the Commandant provides advice on matters of business and commercial law and other matters within the cognizance of the General Counsel for the Department of the Navy of which his office is a part.[3]

Constraints

Title 10 of the United States Codes establishes the regulatory procedures that must be followed in the Marine Corps. This fact cannot be forgotten when evaluating the processes of management. Subtitle A of Title 10, as revised, contains ten parts of 165 chapters with over 2600 specific regulations or General

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[1] Ibid., pp. 1-25 through 1-27.

[2] Ibid., p. 1-25.

[3] Ibid.

Military Law governing the Department of Defense. These laws govern organization and general military power; personnel; training; and service, supply and procurement. Subtitle C governs the Navy and Marine Corps. It contains 459 chapters with over 2800 specific laws governing organization, personnel, education, training and general administration. In addition there are numerous Executive Orders and the laws contained in the annual appropriation acts. Within the authority granted the Secretary of Defense and the Secretary of the Navy additional regulations are imposed.

These aforementioned constraints result in the development of even more constraints within the Marine Corps to ensure that the sum of its parts is within prescribed bounds.

Tables of Organization spell out the organization of each unit, right down to the individual Marine, his duties, his rank, his special qualifications, and his weapons. A commander can make recommendations for changes in his unit's organization but such changes are only approved by the Commandant after full consideration of the effect on all similar units and the Marine Corps as a whole.

Tables of Equipment list the equipment required by each unit. These tables show the major items of combat equipment such as crew-serviced weapons, radios, and vehicles the unit will use regardless of where it is sent to fight. Again a commander can recommend changes but such changes must also be considered in light of their total effect.

Tables of Allowance give the basic quantities of standard items such as cots, clothing lockers and specialized items which vary in direct proportion to the number of men in a unit and its equipment.

Mount-Out Supplies are predetermined quantities of supplies, repair parts and spare equipment a unit must maintain in inventory above its day-to-day usage requirements to enable it to be able to deploy to combat immediately. The importance of this concept has been demonstrated repeatedly during the Cold War.

Within this regulatory framework the Marine Corps must function and the introduction of new procedures, methods or systems must always be evaluated in the light of these constraints. The laws can be changed, and this occurs, but the constitutional power and the will of the Congress will ultimately, and rightly, have the last say.

Relationships to the Unified Commands

As previously indicated the Commandant does not command the Fleet Marine Forces. In this instance "command" is used in terms of operational control or ". . . those functions of command involving the composition of subordinate forces, the assignment of tasks, the designation of objectives and the authoritative direction necessary to accomplish the mission."[1] The FMF's are under the operational

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[1]Joint Chiefs of Staff, UNAAF, p. 31.

control of the fleet commanders who, in turn, are under the operational control of a unified command. A unified command is a command with a broad continuing mission, under a single commander and composed of significant units of two or more services.[1] Figure 3 shows a simplified example of the organizational structure of a unified command.

It would appear from Figure 3 that if the chain of command is structured in such a way, then that is the way finances, supply support, etc., should also flow. This is not practicable, however, because of the high degree of flexibility that must exist. The structure of a particular unified command can completely change within a matter of hours or minutes. It is easy to visualize what would then occur in financial or other supporting procedures. The key is that the unified commander has operational control and the service chiefs provide the necessary support. Another way to consider this arrangement is that the service chiefs run <u>production</u> and the unified commanders run <u>marketing</u>.

Summary

The Marine Corps is a separate military service with its position and status specified by law. Its missions or objectives are also established by law and it has an organizational structure

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[1] <u>Ibid</u>., p. 38.

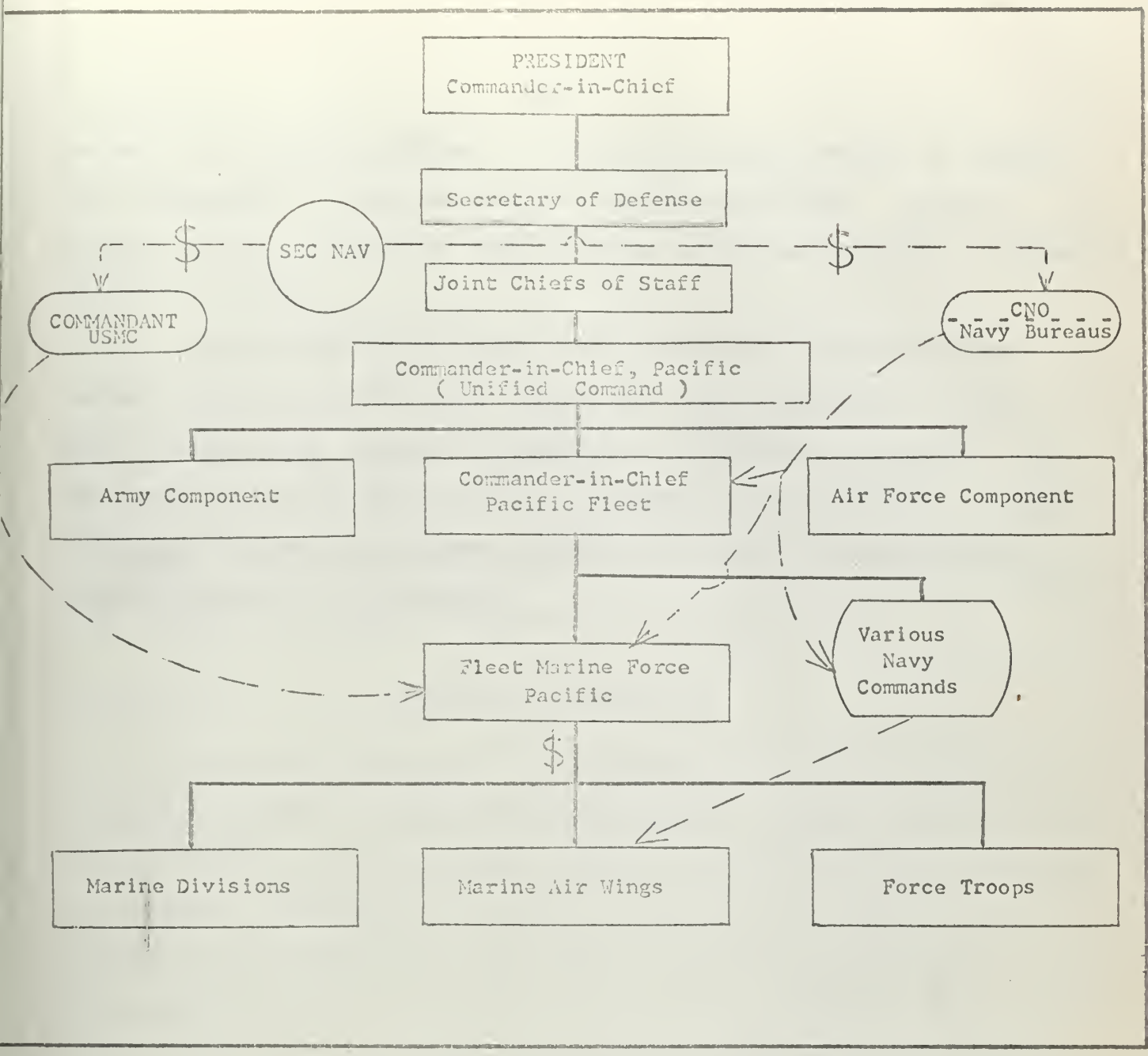

Fig. 3.--Example of Unified Command Structure

to carry out the objectives. A staff has been provided to assist the Commandant in carrying out his responsibilities. It must operate within constraints and in close coordination with the other military services.

As a military service it must operate in an effective manner and do so in the most economical manner possible. To do this it must have effective management processes or systems. In the next chapter various types of systems will be defined. In the following chapters management systems the Marine Corps has or is developing will be discussed.

CHAPTER III

THE MATTER OF DEFINITION: A FRAME OF REFERENCE

The purpose of this chapter is that of providing a definition of terms. In particular, the terms "command," "management," "systems," and "control" are examined in detail. Encompassing and often ambiguous though they may be, they provided the frame of reference on which this study was made.

Command and Management

The words "command" and "management" are used freely and frequently within the defense establishment. Their meanings are not always clear. In one context they are accepted as synonymous terms. In another, management is seen as an element of command. When either is associated with the term "systems" the problem is compounded.

The Chairman of the Joint Chiefs of Staff, General Earle G. Wheeler, U. S. Army, has stated: "Management is inherent in command, but the converse is not true since management does not include as extensive authority and responsibility as command."[1] An opposing

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[1] General Earle G. Wheeler, "Management Is For the Troops," Navy Management Review, X, No. 11 (November, 1965), p. 4.

viewpoint has been presented by Dr. Robert N. Anthony: "Some people draw a sharp distinction between command and management. I believe such a distinction is also a fallacy. . . . The commander is the manager in the sense that he and only he makes the decisions."[1]

Is this difference one of semantics or a real one? Webster's defines "command" as:

> 1. To give an order or orders to; direct with authority.
> 2. To have jurisdiction over; control.
> 3. To be able to have and use. . . .
> . . . . . .
> 5. To control (a position); overlook . . . to exercise power or authority, be in control, act as a commander.[2]

The Dictionary of United States Military Terms for Joint Usage[3] defines command as:

> 1. The authority which a commander in the Military Service lawfully exercises over his subordinates by virtue of rank or assignment. Command includes the authority and responsibility for effectively using available resources and for planning the employment of, organizing, directing, coordinating, and controlling military forces for the accomplishment of assigned missions. It also includes responsibility for health, welfare, morale, and discipline of assigned personnel.

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[1]Address by the Honorable Robert N. Anthony, Assistant Secretary of Defense (Comptroller) before 1956 Navy Supply Conference, Harrisburg, Pennsylvania, May 4, 1955 (mimeographed).

[2]Webster's New World Dictionary of the American Language (New York: The World Publishing Co., 1957).

[3]Joint Chiefs of Staff, Department of Defense, Dictionary of United States Military Terms for Joint Usage (Short title--Joint Dictionary), JCS Pub. 1, January 1, 1966. The Joint Dictionary is prepared in coordination with the military services by the Joint Chiefs of Staff and the Secretary of Defense has directed its use.

2. An order given by a commander; that is, the will of the commander expressed for the purpose of bringing about a particular action.
3. A unit or units, an organization, or an area under the command of one individual.
4. To dominate by a field of weapon fire or by observation from a superior position.[1]

If the last two, of the eight definitions cited, are disregarded because of their pure military application, two related meanings remain. First, "command" connotes authority and responsibility; secondly, it is the decision of a commander expressed for the purpose of bringing about action. This second meaning is based upon the assumed validity of the first.

The functions of management are generally agreed within the literature to include decision making, organizing, staffing, planning, controlling, budgeting, communicating, and directing. The military defines "management" as:

> A process of establishing and attaining objectives to carry out responsibilities. Management consists of those continuing actions of planning, organizing, directing, coordinating, controlling, and evaluating the use of men, money, materials, and facilities to accomplish missions and tasks. Management is inherent in command, but it does not include as extensive authority and responsibility as command.[2]

One major difference is apparent: The concept of authority and responsibility appears in the definitions of "command" but is not present in "management." The responsibility aspects of command are thus woven into the fabric of the military thought processes.

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[1] Ibid., p. 42.

[2] Ibid., p. 114.

While examination of this point is beyond the scope of this paper, it must be recognized that responsibilities accepted by a military commander are broader than those of a business manager. The manager is not responsible under law for the mental, moral, and physical welfare of his employees and their families, but the military commander is.[1] More importantly, the nature of military decisions affects the life or death of their people and the nation.

Thus, whatever the debate, "command" is associated with the authoritative transmission of the decisions of the responsible commander. Concurrently, whether the decisions involve combat operations or business-type matters, they are often reached through the processes of management.

Systems Defined

"Systems" is used as freely and frequently as "command" and "management." Within the defense establishment, it has been combined with other words to form phrases such as "management systems," "command systems," "control systems," and "supply systems." Webster's defines "systems" as:

> 1. A set or arrangement of things so related or connected as to form a unity or organic whole: as, a solar system, irrigation system, supply system. . . .
> . . . . . .
> 4. A set of facts, principles, rules, etc. classified or arranged in a regular, orderly form so as to show a logical plan linking the various parts. . . .

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[1]See paragraph 7.d.(5), Appendix I.

5. A method or plan of classification.
6. A regular, orderly way of doing something; order; method; regularity . . . .[1]

William A. Gill, a management consultant and writer in the field of management, notes: "In a relatively few years, the phrase 'systems and procedures' has acquired considerable meaning in business management and public administration."[2] But Gill does not define either word and always uses them as a phrase. He writes of a systems and procedures field and describes its role in the job of management. He states:

> Every person who supervises, directs, or administers the activities of subordinates . . . has a responsibility . . . for the systems and procedures that he and his subordinates employ--the <u>how</u> of getting things done, the <u>ways and means</u> used to accomplish the tasks assigned, and the <u>methodology</u> of the work processes used.[3]

In 1950, Richard F. Neuschel published a book entitled <u>Streamlined Business Procedures</u>. When he revised the book in 1960 he changed the title to <u>Management by Systems</u>.[4] Neuschel defines a system as:

> . . . a network of related procedures developed according to an integrated scheme for performing a major activity of the business.[5]

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[1] <u>Webster's . . .</u> , pp. 1480-1481.

[2] William A. Gill, "Systems and Procedures," <u>Systems and Procedures: A Handbook for Business and Industry</u>, ed. Victor Lazzaro (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1959), p. 1.

[3] <u>Ibid</u>., p. 2.

[4] Richard F. Neuschel, <u>Management by System</u>, 2nd ed. (New York: McGraw Hill Book Company, Inc., 1960).

[5] <u>Ibid</u>., pp. 9-10.

Adding to the semantics problem raised within management literature has been the impact of the computer. A whole new language has evolved because of it. In an effort to clarify some of the problems created, the Bureau of the Budget has prepared a glossary of automatic data processing terms for use as an authoritative reference by all officials and employees of the executive branch of the government.[1] This glossary defines "system" as: "An assembly of procedures, processes, methods, routines or techniques united by some form of regulated interaction to form an organized whole."[2]

The reader will note that the words "procedures" and "methods" have appeared in all (or nearly all) definitions. Such a relationship is undoubtedly generic and is clearly involved in any definition attempted. For the purposes of this paper, methods and processes are the ways in which people, machines, or a combination of both, perform specific tasks. Procedures are the sequential application of appropriate methods and processes established for the uniform accomplishment of the routine actions required to perform the functions of an organization. Accordingly, and for the purposes of this study, a system is a group of related procedures united by regulated interaction to form an organized whole for performing the functions of an organization.

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[1]Bureau of the Budget, Executive Office of the President, Automatic Data Processing Glossary (Washington: GPO, 1962), p. i.

[2]Ibid., p. 54.

The term "subsystem" suggests the existence of minor, or lesser, systems. Large organizations can have many complex functions. By dividing the larger functions into manageable parts, systems are created to handle component parts. If these systems interact to achieve the larger functions they are in fact subsystems. For purposes of this study, however, "systems" and "subsystems" are considered generally synonymous, although the subsystem will always be subordinate to a larger system.

From the viewpoint of command, a command system would be a system for transmitting the decisions of a commander. This is, of course, a process of communication. The commander's voice, the forward slash of his sword to launch the attack, or a teletype message, are all elements of command systems. A command system becomes, therefore, the whole group of related procedures which provide the umbrella under which the authority and responsibility of command in a military organization are exercised. As such, it deals not only with the functions of directing and controlling, but with the whole spectrum of military activity.

Control

The military concept of control is allied to the concept of command and all its meanings. This relationship is demonstrated by the manner in which standard military definitions have been developed. The military definition of control is: "Authority which may be something less than full command exercised by a commander

over part of subordinate or other organizations.[1]

The phrase "command and control" is also used with regularity and quite often in connection with systems. It is defined as:

> An arrangement of personnel, facilities, and the means for information acquisition, processing, and dissemination employed by a commander in planning, directing, and controlling operations.[2]

There are other uses of the word "control" by the military that warrant examination. "Administrative control" is a phrase used to delineate command relationships. It is defined as:

> Direction or exercise of authority over subordinate or other organizations in respect to administrative matters, such as personnel management, supply, services, and other matters not included in the operational missions of the subordinates or other organizations.[3]

Another military phrase that follows the same conceptual pattern is "operational command." It is synonymous with "operational control"[4] and defined as:

> Those functions of command involving the composition of subordinate forces, the assignment of tasks, the designation of objectives and the authoritative direction necessary to accomplish the mission. . . . It does not include such matters as administration, discipline, internal organization, and unit training, except when a subordinate commander requests assistance.[5]

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[1] Joint Dictionary, p. 48.

[2] Ibid., p. 45.

[3] Ibid., p. 2.

[4] Ibid., p. 139.

[5] Ibid.

Thus, the military makes a clear distinction between the administrative or management aspects of military command and the operational aspects. Similar dichotomies are drawn by Anthony in his writings about management control systems. He writes:

> Management control is the process by which managers assure that resources are obtained and used effectively and efficiently in the accomplishment of the organization's objectives. . . .
>
> . . . . . .
>
> A management control system is a total system in the sense that it embraces all aspects of the company's operation. . . .
>
> . . . . . .
>
> [Control] is a process carried on within the framework established by strategic planning. Objectives, facilities, and financial factors are more or less accepted as given.[1]

This approach seems to simply add that management control is doing the functions of management effectively and efficiently. He defines operational control as ". . . the process of assuring that specific tasks are carried out effectively and efficiently."[2]

Another writer emphasizes the information process. He writes: "The essence of control is action which adjusts operations to predetermined standards, and its basis is information in the hands of managers. (Italics mine.)[3]

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[1] Robert N. Anthony, et al., Management Control Systems: Cases and Readings (Homewood, Ill.: Richard D. Irwin, Inc., 1965), pp. 1-14.

[2] Ibid., p. 7.

[3] Douglas S. Sherwin, "The Meaning of Control," Readings in Management, eds. Max D. Richards and William A. Nielander (Cincinnati: South-Western Publishing Co., 1958), p. 423.

From these aspects, certain elements of control systems can be derived which Massie sets forth as:

1. A predetermined goal . . . or yardstick.
2. A means of measuring current activity . . . .
3. A means of comparing current activity with a criterion.
4. Some means of correcting the current activity so as to achieve the desired goal.[1]

The Problem of Information Getting

The common thread throughout the systems just presented is the need for information. Systems exist to fill this need. An information system, therefore, is "the network of all communications methods within an organization. Information may be derived from many sources other than a data processing unit, such as by telephone, by contact with other people, or by studying an operation."[2] Information systems involve the whole process of communications, but all information cannot be in constant flow, nor remembered by a decision maker. "A system for locating and selecting, on demand, certain documents, or other graphic records relevant to a given information requirement from a file of such material"[3] is an information retrieval system.

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[1]Joseph L. Massie, Essentials of Management (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1964), p. 54.

[2]Bureau of Budget, . . . Glossary, p. 54.

[3]Ibid.

To be useful to management, however, information must be processed to isolate that which is important. Therefore for purposes of this study, a management information system is a system for the communication, storage, and retrieval of information, with the means and methods of processing it so as to produce useful information for the performance of the functions of management.

The distinction between management control and operational control mainly serves the purpose of differentiating the type information required. Information systems, on the other hand, permeate organizations, but management information systems must be tailored to produce information useful to management's needs at the various levels. Lastly, all systems must rely upon the communication system to connect them in a network to form the management system. It is apparent then that many types of systems exist but in the final analysis all can be considered within the context of management systems. The classifications only serve the purpose of providing a means of discussing the various aspects of management in more manageable terms.

The Marine Corps recognizes this interrelationship by defining a management system as: "one which gathers information; then processes, evaluates and interprets the information and develops operating instructions. The system next distributes the instructions and finally checks to see if they're carried out."[1]

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[1]Headquarters, U. S. Marine Corps, Marine Corps Command and Management Presentation (CAMP), December, 1966, p. II-45.

Marine Corps Systems--An Introduction

The Marine Corps has many systems that fit the definitions previously developed. There are many, however, that involve the routine processes of daily business. This paper will examine the new systems that are being developed and the systems being modified to take advantage of computers.

These systems are classified by the Marine Corps as command and management systems.[1] They are further classified into three categories: functional area systems, tactical systems, and information systems. The functional area systems are, in turn, divided into four parts: manpower, disbursing, supply, and maintenance.[2] Financial management is not classified as a system though, logically, it is clearly one and will be treated as such here.

The Marine Corps Command and Management Presentation[3] discusses fourteen major systems that are in various stages of development or implementation. This study will examine these and four other systems that are pertinent. The classification used by the Marine Corps has been followed except that manpower and disbursing systems are discussed within the same chapter because of the close relationship that exists between them. The Marine Corps has

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[1] HQMC (DAMP), op. cit.

[2] Ibid.

[3] Ibid.

also classified some systems as information systems but this classification has been abandoned because all systems could fit this category. The systems so classified have been included under "other systems" along with two others of interest. There are undoubtedly many other systems within the Marine Corps, but attention is drawn to the newer systems.

The beginnings of these systems could probably be traced to the establishment of the Marine Corps itself. The modern management revolution in the military, however, had its foundation in the National Security Act of 1947.[1] Primary emphasis was on the management of money and from this other systems have evolved. For this reason the financial management system will be discussed first.

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[1]For full discussion of this point see John C. Reis, The Management of Defense (Baltimore: The Johns Hopkins Press, 1954).

CHAPTER IV

THE FINANCIAL MANAGEMENT SYSTEM

Acquisition of the necessary men, money and material to accomplish the missions of the Marine Corps and the effective and efficient utilization of these resources are the two major responsibilities of the Commandant. Of all the systems that the Marine Corps has to assist in its management, that involving financial matters is probably the most important.

Understanding the financial management system of the Marine Corps requires understanding why and how the present system was achieved. With this as a starting point, the impact of the latest system can be placed in proper perspective. For these reasons the background of the initial system is presented. It is followed by a description of the existing system and the system to be implemented on July 1, 1967.

Background

Prior to the enactment of the National Security Act of 1947, there was no legal requirement having to do with financial management *per se*. Emphasis traditionally was on control of expenditures.

The Anti-Deficiency Act of 1906--the primary statute relating to expenditures--represented an effort to stop deficiency appropriations and to tighten controls over budget execution.[1] The Budgeting and Accounting Act of 1921 made a significant contribution towards linking financial planning with objectives.[2] Section 1211 of the Appropriation Act of 1951 modernized the anti-deficiency statutes, but the real beginning of financial management was Title IV of the National Security Act Amendments of 1949 which ". . . contemplated nothing less than a financial and management revolution in the armed services."[3]

One of the results of the amendments was that the military services would not only prepare, present and justify estimates, but also establish procedures to account for and report on the cost and performance of identifiable programs. Congress no longer wanted a shopping list of goods to be bought, but, instead, careful systematic planning of the costs of equipping, maintaining and training the services.

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[1]Alfred H. Teichler, LCDR, USN, et al., "Administrative Control of Funds--The Anti-Deficiency Story," (Unpublished group research project, The George Washington University Navy Graduate Financial Management Program, 1962), p. 3.

[2]Executive Office of the President, Bureau of the Budget, The Bureau of the Budget, What It Is, What It Does (Washington, D.C.: GPO, 1966), pp. 5-13.

[3]Jesse Burkhead, Government Budgeting (New York: Simon and Schuster, Inc., 1949), p. 163.

The same act established the role of the comptrollers within the Department of Defense and the services. Their responsibilities were for the preparation of budget estimates and the establishment and supervision of principles, policies and procedures relating to budget preparation and execution.

On June 1, 1950 the office of the Comptroller of the Navy was created. Almost three years elapsed before comptrollers were established below the departmental level in 1953.[1]

Prior to the Secretary of the Navy's policy statement the Marine Corps had taken action to implement Title IV. A fiscal division had been created within the staff of Headquarters, Marine Corps, but it was under the control of the Quartermaster-General.[2] The first major breakthrough in implementing Title IV was the creation of the Marine Corps Stock Fund and the separation of the Fiscal Division from the control of the Quartermaster-General.[3] The Fiscal Director was given the responsibilities of a Comptroller.

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[1]U. S., Department of the Navy, Secretary of the Navy Instruction 5400.4, November 18, 1953, p. 1.

[2]Kenneth W. Condit and Major John H. Johnstone, USMC, A Brief History of Marine Corps Staff Organization, Marine Corps Historical Reference Series, Number 25 (Washington: Historical Branch, G-3 Division, Headquarters, U. S. Marine Corps, 1963), p.28.

[3]Major E. A. Wilcox, USMC, et al., "Financial Management in the Marine Corps: An Evaluation" (Unpublished group research project, The George Washington University Navy Graduate Financial Management Program, 1962), pp. 12-15.

At levels below the headquarters, field commanders were never fully aware of the money required or the methods used in obtaining supplies necessary to support their operations. They knew that the paymasters paid their troops and the supply department provided their supplies. With the beginning of fiscal year 1955 and as a result of Title IV, the Marine Corps developed a plan to share, or decentralize, the financial management responsibility.[1] The plan required the allotment of funds to field commanders and for them to take an active part in budgeting for these funds. The rationale in this plan was that the most accurate cost data were available at the point where requirements were developed and decisions were made to spend the funds. This point was at the field commanders headquarters.[2] Field commanders would be provided with budget guidance to assist him in preparing realistic financial plans.

Budget guidance contains information based upon the Marine Corps Annual Program Objectives.[3] The guidance provided is information relative to the budget year and the budget year plus one for the following categories:

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[1]Marine Corps Institute, Budget Formulation and Execution, MCI 34.661 (Washington, D. C.: Marine Corps Institute, Marine Barracks, 1965), p. 1-3.

[2]Ibid.

[3]Program objectives are explained under the Planning-Programming-Budgeting System.

(1) Personnel. Includes planned military and civilian personnel allocation to the command.

(2) Training and Operations. Contains guidance relative to types of training to be required at both the unit and the individual level.

(3) Logistics. Includes instructions relative to rental housing, purchases from the Stock Fund, expected price increases authorized, maintenance of facilities, and levels of supply to be maintained.

(4) Aviation. Includes guidance on available training, installations, material, and troops.

(5) Special Service Activities. Contains guidance on appropriated fund support for library books, athletic team activities, and off-duty education.[1]

The primary reason for decentralization of financial management responsibility was to provide for a uniform system of budgeting but there were other important reasons. Commanders would have control of their finances comparable to their control in other areas. Cost-consciousness would be developed in all personnel through more thorough realization of the cost of material and services consumed. More accurate data for development of budgets would be created and more detailed justifications could be provided. Decentralization also would provide the Commandant with a method whereby he could ensure a more efficient use of resources.[2]

Commanders to whom appropriated funds are allotted or sub-allotted have the following functions:

a. To examine their mission and assigned tasks and determine the most economical means by which they may be accomplished.

b. To prepare budget estimates setting forth fund requirements for accomplishing the mission and assigned tasks as required by the issuer of the allotment or sub-allotment.

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[1]Marine Corps Institute, p. 2-33.

[2]Ibid., p. 1-3.

c. To submit these budget estimates, accompanied by detailed justifications, to the allotment or sub-allotment grantor.

d. To prepare a financial plan for utilization of funds that is authorized in response to the budget request.

e. To insure that funds are utilized in accordance with approved plans and directives of higher authority.

f. To insure that funds authorized are not over-committed, over-obligated or over-expended.

g. To maintain records reflecting the status and utilization of authorized funds and to account for these funds to either the Commandant or the grantor of the sub-allotment, as specified by current regulations and directives.

h. To conduct a continuous review of their fiscal operations.[1]

The unique structure of the Marine Corps and its position within the Department of the Navy results in its being supported directly by Marine Corps appropriations and indirectly by appropriations of other defense agencies. The primary sources of funds are four appropriations and one revolving fund. They are:

a. Military Personnel, Marine Corps provides the funds to finance costs directly attributable to personnel.

b. Reserve Personnel, Marine Corps provides funds to finance costs directly attributable to personnel in the Marine Corps Reserve and in the Officer Candidate Programs.

c. Operations and Maintenance, Marine Corps provides the funds to finance costs of the operation and maintenance of the Marine Corps. This appropriation is of primary concern to the field commanders because it directly affects his operations.

d. Procurement, Marine Corps finances the purchases of major items of equipment and ammunition.

e. Marine Corps Stock Fund is the revolving fund for which operating capital was initially furnished from funds appropriated by Congress and absorption of inventories at the time of its creation. Its operation capital is sustained by transfer of funds from other appropriations.[2]

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[1]Headquarters, U. S. Marine Corps, Marine Corps Commanders and Financial Management Manual, Marine Corps Order P7000.9A (Washington, D. C.: February 1, 1965), p. 3.

[2]Ibid., p. 1.

The other appropriations that support the Marine Corps are:

Military Personnel, Navy
Reserve Personnel, Navy
Operations and Maintenance, Navy
Military Construction, Navy
Military Construction, Navy Reserve
Aircraft and Related Procurement, Navy
Procurement of Aircraft and Missiles, Navy
Navy Management Fund
Research, Development, Test and Evaluation, Navy
Family Housing Defense (Marine Corps Subheads)[1]

Of all the appropriations that support the Marine Corps there are only seven for which the Marine Corps has formal responsibility for budget formulation and execution. These are the Marine Corps appropriations; Research, Development, Test and Evaluation, Navy; and Family Housing, Defense. The Fleet Marine Force commanders become involved only with Operations and Maintenance, Marine Corps. Headquarters, Marine Corps and commanders within the supporting establishment formulate budgets for the other appropriations.[2] One exception to this is the involvement of Marine Corps aviation in contributing to budget formulation under the auspices of Navy aviation commands.

One of the purposes of decentralizing financial management within the Marine Corps was to align financial responsibility with command responsibility. Methods of funding have not supported this concept. What must be realized, however, is that field commanders

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[1]Marine Corps Institute, p. 2-3.

[2]Headquarters, U. S. Marine Corps, Financial Accounting Manual, Marine Corps Order P7300.8A (Washington, D. C.: June 3, 1966), p. 3-3.

have control only over a limited number of activities. For this reason, they have been given financial responsibility for only the things they can directly control. There are cases where they receive funds from other appropriations but the main direction and control is exercised by Headquarters, U. S. Marine Corps.

The Planning-Programming-Budgeting System

In the late 1950's the gaps between budgets and plans were recognized at Headquarters, U. S. Marine Corps. Study and development commenced in 1957 and the Marine Corps Planning and Programming System was established in 1959. Thus, the Marine Corps had three years experience when the Department of Defense implemented its planning-programming-budgeting system (PPBS) in 1962.[1]

The planning-programming-budgeting system has been the subject of numerous books and articles and, therefore, will not be discussed in detail.[2] The system within the Marine Corps consists of a planning process which provides for methodically determining objectives; examining alternative methods; selecting a course of action; and achieving a decision. This establishes direction and control for the approved plans which are decisions of the Commandant or higher authority. Programming is the process by which plans are

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[1] Marine Corps Command and Management Presentation, p. II-14.

[2] For discussion of the planning-programming-budgeting system see Charles J. Hitch, Decision Making for Defense (Berkeley: 1965) and David Novick, ed., Program Budgeting (Washington: GPO, 1964).

translated into approved programs. It involves determination of the quantity and timing of resource requirements and emphasizes the realities of cost, feasibility and effectiveness. Programming also identifies alternative courses of action in terms of cost and effectiveness to achieve approved objectives or plans. Costs from a programming standpoint are placed in three categories. These are: the development costs of a program; acquisition costs; and the cost of operating the program over its useful life.[1] The budgeting process translates the costs of programs into the appropriation language for annual budget requests.

This relationship is explained by the Marine Corps in the following manner:

> The annual Marine Corps budget request is not an entity unto itself. It has its roots in the past, and must be directly related to what is to be done in the future as reflected in programming documents. The portion of the total costs of approved Marine Corps programs required during the budget year equals the Marine Corps budget request for that year, plus those portions of appropriations not sponsored by the Marine Corps, but which support it.[2]

The fourth process is the appraisal function. This ". . . involves the timely and impartial analysis of all essential information in order to evaluate the progress, effectiveness, efficiency and balance of the total effort,"[3]--in simple terms, an accounting and review process.

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[1]Headquarters, U. S. Marine Corps, Marine Corps Manual for Planning and Programming, Headquarters Order P3121.2, January 29, 1965, p. 1-3.

[2]Ibid., p. 1-4.

[3]Ibid.

The concept of decentralization of financial management is also used within the headquarters. Each Marine Corps appropriation[1] and each Navy appropriation for which the headquarters is involved[2] has a staff officer as the appropriation sponsor. This results in staff officers having cognizance over an area being responsible for financial management supervision of that area.

The organization for programming is contained in Figure 4. This shows the interrelationships and responsibilities involved in developing Marine Corps programs. Figure 5 shows the organization for budgeting and program costing and the appropriation sponsors.

The sequence of planning and programming and the flow of decisions, guidance, information, advice, proposals and response are shown in Figure 6. This figure also relates the PPBS system in the Marine Corps to the Departments of the Navy and Defense. Once a program has been submitted and approved it becomes part of the Five Year Defense Plan.

To change a program, a Program Change Request (previously known as a Program Change Proposal) must be submitted. This process is reflected in Figure 7.

As shown in Figures 4 and 5, all major staff elements are involved in the PPBS system, though in different relationships. The focal elements in the process are the Deputy Chief of Staff (Plans

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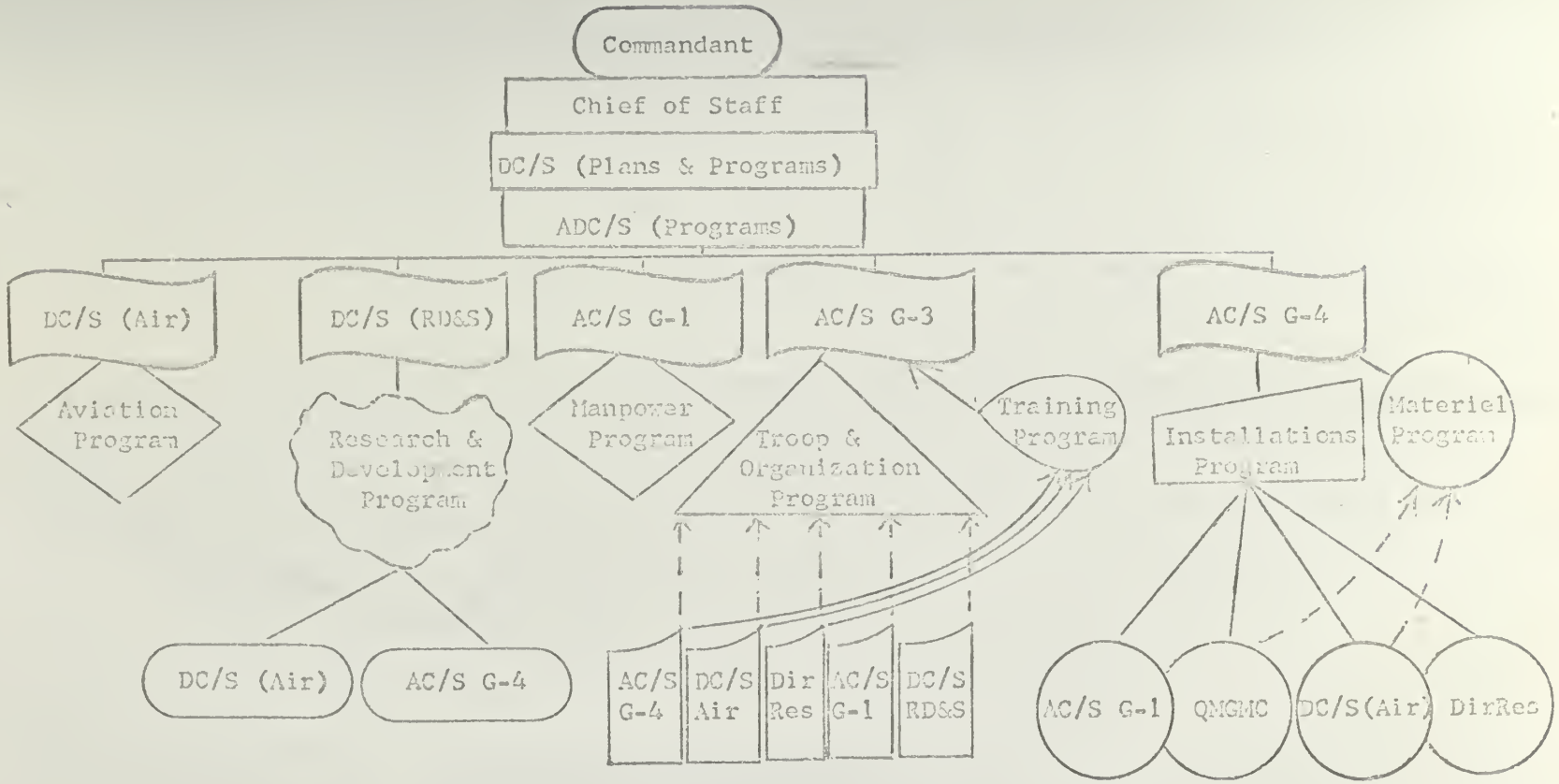
[1] Supra, p. 47.

[2] Ibid.

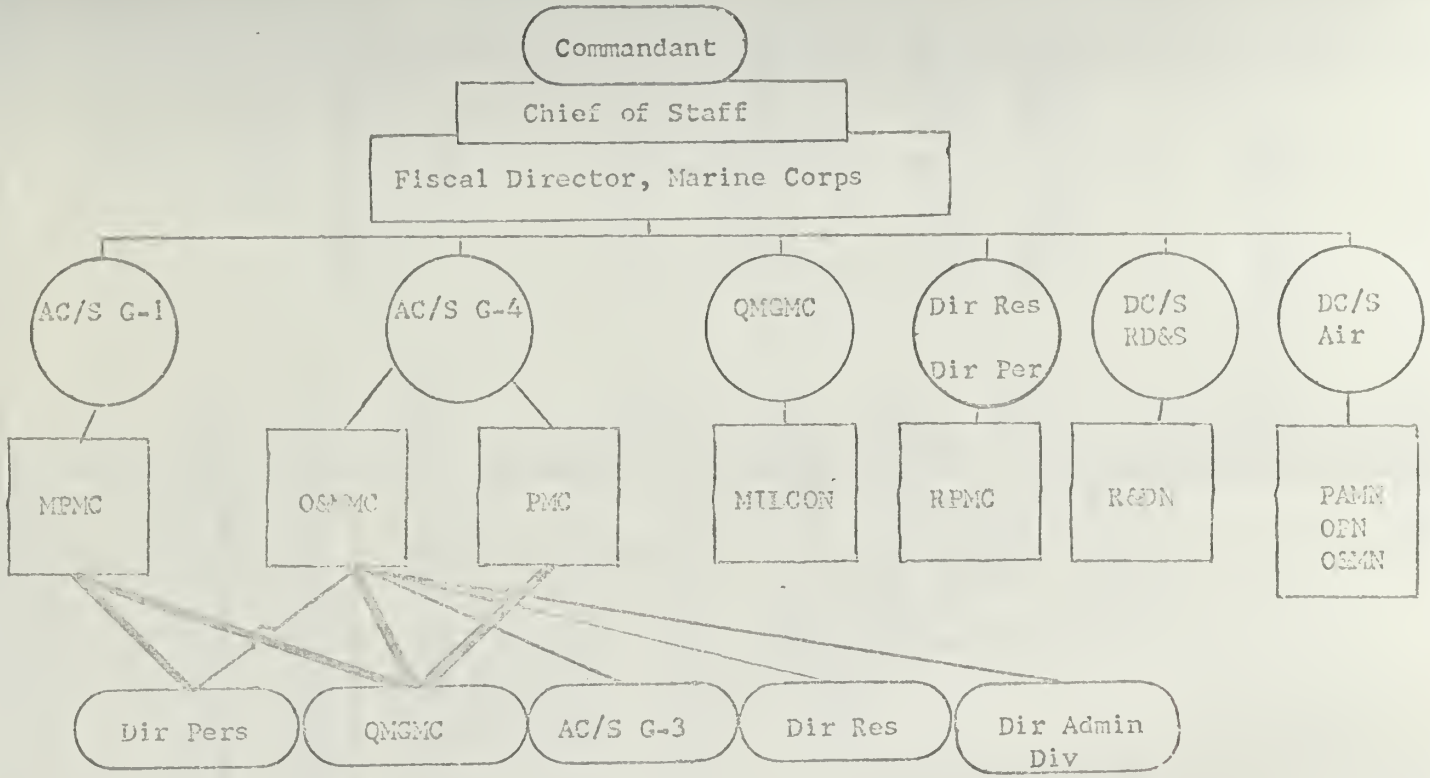
ORGANIZATION FOR PROGRAMMING



(Adapted from Headquarters Order P3121.2, Manual for Planning and Programming.

Fig. 4.--Organization for Programming

ORGANIZATION FOR BUDGETING AND PROGRAM COSTING



APPROPRIATION ABBREVIATIONS

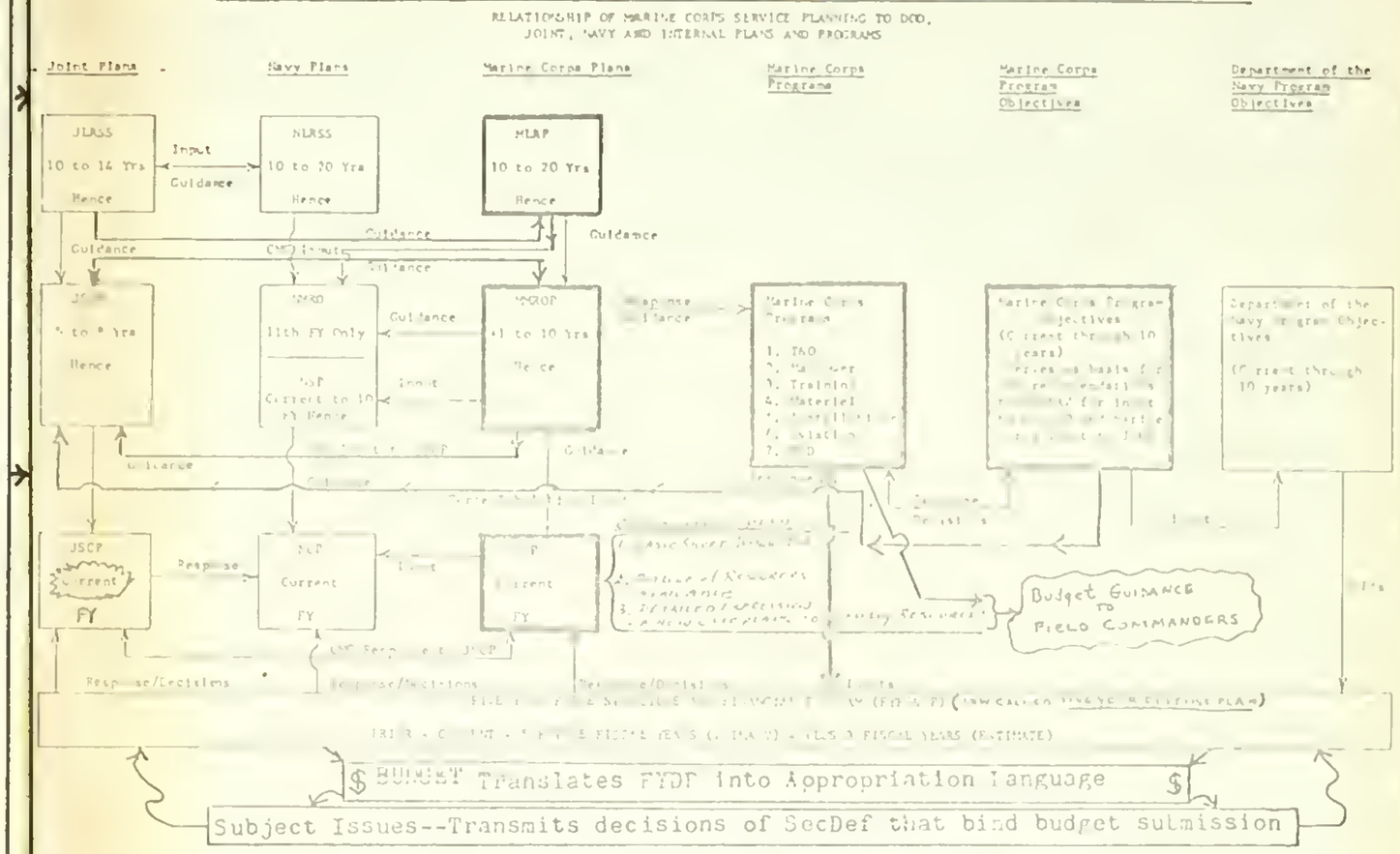
MPMC = Military Personnel, Marine Corps
O&MMC = Operation and Maintenance, Marine Corps
PMC = Procurement, Marine Corps
MILCON = Military Construction
RPMC = Reserve Personnel, Marine Corps
R&DN = Research and Development, Navy
PAMN = Procurement of Aircraft and Missiles, Navy
OPN = Other Procurement, Navy
O&MN = Operation and Maintenance, Navy

Fig. 5.--Organization for Budgeting and Program Costing

SEQUENCE OF PLANNING AND PROGRAMMING

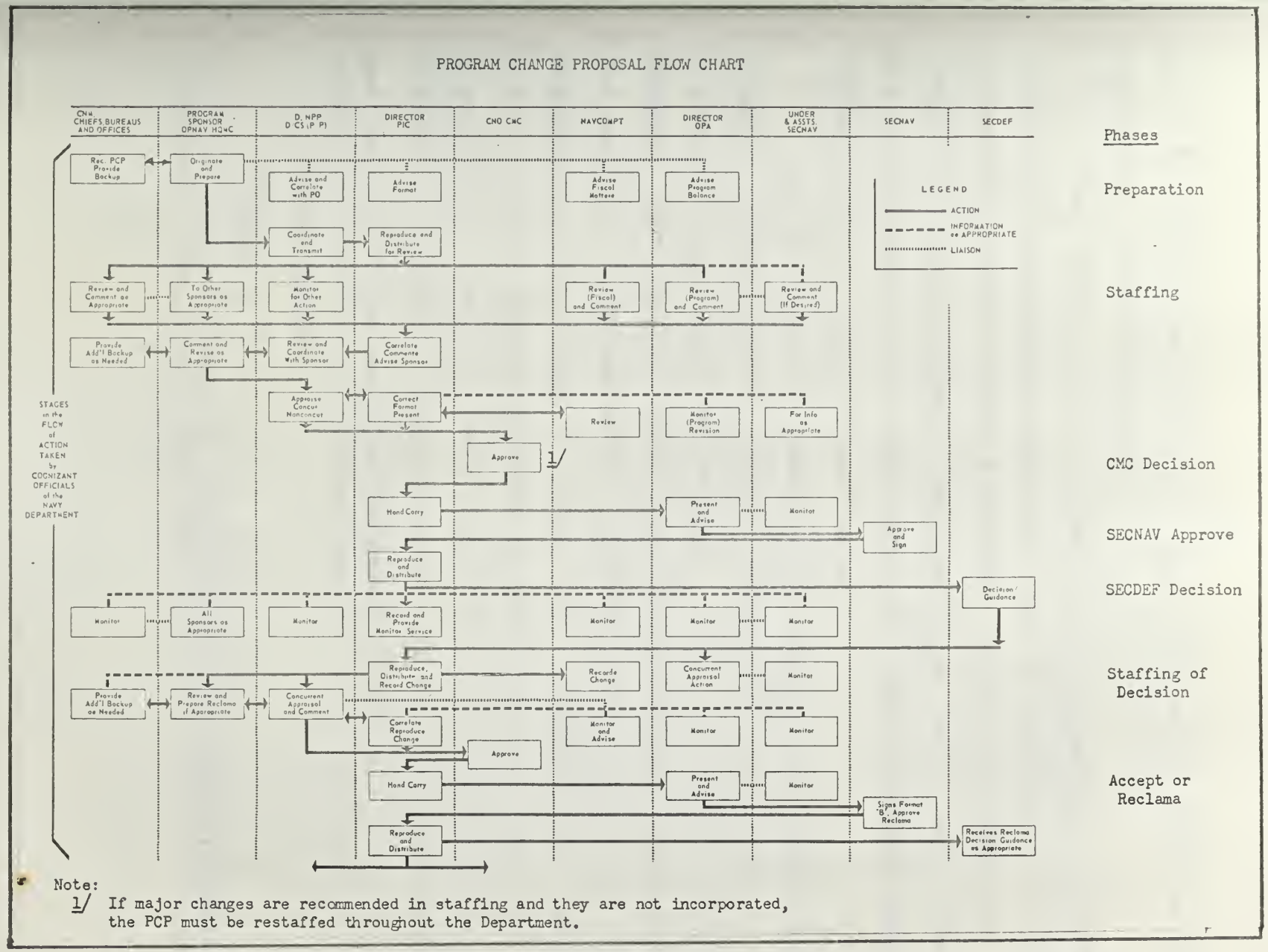
DOCUMENT	DOD	DESCRIPTION
MLRP	JCS (JLRSS)	The Marine Corps Long Range Plan (10-20 years in future) consists: 1. Appraisal of strategic situation. 2. Long range concept of operations. 3. Long range force structure to be evolved. 4. Estimate of Marine Corps requirements.
MMROP	JSOP	The Marine Corps Mid-Range Objectives Plan (2-10 years in future) consists 1. Appraisal of Marine Corps roles and missions. 2. Concept of Marine Corps operations for cold, limited and general war. 3. Force, structure and organizational objectives concepts of the Marine Corps. 4. Planning factors.
MARINE CORPS PROGRAM DOCUMENTS		The seven Marine Corps Program Documents provide information for the internal program management by the HQMC staff.
MARINE CORPS PROGRAM OBJECTIVES		The Marine Corps Program Objectives will contain in annual increments, the Marine Corps force levels and supporting programs necessary to achieve the CMC objectives set forth in the MMROP.
DEPARTMENT OF THE NAVY PROGRAM OBJECTIVES		The Department of the Navy Program Objectives contains a formal and continual record of objectives approved by SECNAV.
PCP		The approved PCP form used to propose and substantiate changes to the FYFSLFP.
FYFSLFP	FYDP	The Five Year ~~Force Structure and Financial Program~~ FISCAL PLAN includes: 1. Forces for the prior and current years and 8 FYs beyond the current fiscal year. 2. The resources of the program (i.e., manpower, costs, material items, etc.) for the current FY and 8 FYs beyond the current FY. (The goals of DOD)
BUDGET		The Budget translates objectives set forth in program terminology in the FYFSLFP to financial accounts prescribed by law.
SUBJECT ISSUES		The Subject Issues transmit decisions of the SECDEF during the budget cycle which are binding on the DOD budget submission and PCP's considered in this cycle.
FYFSLFP		Changes to the Five Year ~~Force Structure and Financial Program~~ FISCAL PLAN are responsive to: 1. Program D's on PCP. 2. Subject Issues on Budget.
MCP		The Marine Corps Capabilities Plan is: 1. The basic short range plan. 2. The outline of resources available. 3. The detailed expression of how CMC plans to employ resources.

Flow of Decision, Guidance, Information, Advice, Proposals and Response



(This Figure has been adapted from Manual for Planning and Programming, MCO P3121.2, and Marine Corps Commanders and Financial Management Manual, MCO P7300.9A)

Fig. 6.--Sequence of Planning and Programming and the Flow of Decision, Guidance, Information, Advice, Proposals and Response.



Note:

1/ If major changes are recommended in staffing and they are not incorporated, the PCP must be restaffed throughout the Department.

Extracted from Headquarters Order P3121.2, Manual for Planning and Programming.

Fig. 7.--Program Change Request Flow Chart

and Programs) and the Fiscal Director. This relationship is also reflected in their missions.[1]

What is not readily apparent is the disparity that exists between the appropriation structure[2] and the Department of Defense program and program element structure. Figure 8 reflects the program and program element structure of the Marine Corps prior to the implementation of the Department of Defense Resources Management System, which will be discussed later.

All the staff is involved with programs and budgets but the programs are expressed in program language and the budget is expressed in appropriation language. Funds are granted, spent, managed, and accounted for in terms of appropriations resulting in the costing of programs being a problem of calculations for which relationships may or may not exist. As a consequence the budget which in a well managed business is looked upon as an aid to management in executing their plans,[3] is in the Department of Defense a constraint. Recognition of this fact and other problems has resulted in the Resources Management System.

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[1]See Appendix II.

[2]Supra, p. 47.

[3]Robert N. Anthony, "New Frontiers in Defense Financial Management," The Federal Accountant, XI, No. 4 (June, 1962), p. 24.

Figure 3.--Programs and Program Elements in the Department of Defense Five Year Defense Plan in which Marine Corps Forces are Involved[a]

Strategic Retaliatory Forces

Missile Forces, Sea Based

Continental Air and Missile Defense Forces

Surveillance and Warning Systems

General Purpose Forces

Attack Carrier Strike Forces
Surveillance and Ocean Control Forces
Amphibious Assault Forces
Multi-Purpose Combat Forces
Special Combat Support Forces
Logistic and Operational Support Forces
Command Communications and Command Support
Marine Corps Division/Wing Teams
Fleet Support Bases, Stations and Activities

Reserve and Guard Forces

General Purpose Forces
General Support

Research and Development

Exploratory Development-Navy
Engineering Development-Navy
Management and Support-Navy

General Support

Individual Training and Education-Navy
Individual Training and Education-Marine Corps
Intelligence and Security-Navy
Communications-Navy
Logistic Support-Navy
Logistic Support-Marine Corps
Military Family Housing
Command and General Support-Navy
Command and General Support-Marine Corps
National Military Command System (NMCS)
Defense Atomic Support Program-Navy
OSD Support-Navy

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[a]Adapted from Appendix A to U. S. Marine Corps Headquarters Order P3121.2, January 12, 1965.

Marine Corps Cost Model

Background

The development of cost-effectiveness analysis within the Department of Defense requires a rapid and accurate method of estimating the costs of many alternative programs and is directly involved with planning and programming. This requires the development of a cost model. The cost model is an attempt to evaluate in a systematic, reproducible and accurate manner the cost implications of alternative programs of the Marine Corps.[1] Costs of the alternatives are useful to the Marine Corps in making cost-effectiveness studies in deciding among alternatives and in response to requests for such information by the Department of Defense.[2]

On June 27, 1966 two directives were issued to the headquarters on the subject of the development of a Marine Corps Cost Model. One directive stated the policies and procedures for the development and implementation of the cost model[3] and the other established work groups for development of the cost model.[4]

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[1]For a discussion of the application of econometric cost models see Charles J. Hitch and Roland N. McKean, The Economics of Defense in the Nuclear Age (Cambridge: Harvard University Press, 1961).

[2]Headquarters, U. S. Marine Corps, Policies and Procedures for the Development and Implementation of the Marine Corps Cost Model, Headquarters Order 5250.1, June 27, 1966.

[3]Ibid.

[4]Headquarters, U. S. Marine Corps, Establishment and Functioning of Marine Corps Cost Model Work Groups, Headquarters Order 5250.2, June 27, 1966.

Cost Model Concept Defined

A cost model is a set of data relating to the costs of various basic elements of a military service and the interrelationship between them which will enable the total costs of any force structure or the incremental costs due to change to be estimated.[1]

The Marine Corps Cost Model Concept has been defined as follows:

> 1. The objective . . . will be to enable various interested parties within the Marine Corps to determine the cost implications of proposed alternative Marine Corps programs with the necessary rapidity and accuracy which will assist in arriving at timely and appropriate decisions.
>
> 2. Achievement of this objective requires the establishment of a structural model of the Marine Corps which will express the interrelationships between various activities of the Marine Corps, and which will show how the costs of all activities would change in relation to a given proposed change in any one of them. The operational focus of the model will be primarily on Marine Corps forces involved in the execution of the statutory responsibility for seizure of advanced naval bases and other land operations required in the conduct of a naval campaign.
>
> 3. The impact of changes in the force level and force structure of the Marine Corps upon the other services and Department of Defense agencies is required as a part of a model used for portraying the costs of proposed programs.
>
> 4. Cost-estimating relationships which provide accurate estimates of cost and manpower implications of new weapons systems will comprise a necessary adjunct to such a model.[2]

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[1] Hq. USMC, Policies and Procedures . . . , Headquarters Order 5250.1, op. cit.

[2] Ibid.

This model will encompass all aspects of cost pertaining to the Marine Corps including all aviation aspects now included in the Navy Cost Model.[1]

Responsibilities

The Deputy Chief of Staff (Research, Development and Studies) is given the responsibility for primary staff supervision in all policy matters concerning the cost model. He also serves as chairman of the Advisory Committee for the Cost Model and is to supervise the development and internal coordination. The advisory committee consists of representatives from the following staff sections:[2]

Deputy Chief of Staff (Research, Development and Studies)
Deputy Chief of Staff (Plans and Programs)
Deputy Chief of Staff (Air)
Assistant Chief of Staff, G-1
Assistant Chief of Staff, G-2
Assistant Chief of Staff, G-3
Assistant Chief of Staff, G-4
Fiscal Director of the Marine Corps
Data Systems Division
Director of Personnel
Quartermaster General

Two types of work groups are specified.[3] The Cost Model Development Work Group consists of the Marine Corps Operations Analysis Group and its assigned officers. Cost Model Advisory Work

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[1] Ibid.

[2] Ibid.

[3] Hq. USMC, . . . Work Groups, Headquarters Order 5250.2, op. cit.

Groups consist of the representatives of the various interested staff elements. The function of these groups is to provide assistance to the developmental group.[1] The use of work groups assures broad staff representation during development of the model. They can apply collective professional and technical judgment and experience to developing and evaluating the model.

Resources Management System

Background

Little apparent advantage was realized by submitting performance type budgets from the point of view of equating the budget to national goals.[2]

Charles J. Hitch became the Assistant Secretary of Defense (Comptroller) in 1961 and implemented the Planning-Programming-Budgeting System.[3] This system provided for long-range planning, a program structure in terms of missions, forces and weapons to accomplish national objectives, and the analytical comparison of alternatives. Planning and programming have proved to be workable and effective but these phases have not yet been integrated with budgeting. PPBS has been in operation six years, yet the Department of Defense still submits budgets under the performance appropriations. Thus the budgetary process as described by Aaron Wildavsky

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[1] Ibid.

[2] David Novick, ed. Program Budgeting (Washington: GPO, 1965), p. 9.

[3] Ibid., p. 57.

remains ". . . incremental, fragmented, non-programmatic, and sequential."[1]

In the summer of 1965, Dr. Robert N. Anthony was appointed Assistant Secretary of Defense (Comptroller) with a mandate to make major changes in the programming, budgeting and accounting systems.[2] By October, 1965, the Secretary of Defense had received and approved a memorandum prepared by Dr. Anthony which set forth the concepts for a management control system.[3] This system was named Project PRIME (an acronym for Priority Management Efforts) and is to be implemented by July 1, 1967.[4] In January, 1966, the Secretary of Defense promulgated a directive setting forth the responsibilities of the Comptroller as follows:

> a. Advise and assist SecDef in Programming, budgetary and fiscal functions.
> b. Provide for design and installation of resources management systems throughout DOD.
> c. Collect, analyze, and report management information for SECDEF, BUBUD, GAO, and others.[5]

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[1]Aaron Wildavsky, The Politics of the Budgetary Process (Boston: Little, Brown and Co., 1964), p. 136.

[2]Office of the Assistant Secretary of Defense (Comptroller) A Primer on Project PRIME (Washington: U. S. Department of Defense, November, 1966), p. 4.

[3]"DOD Resources Management System," a presentation to Comptrollers of Bureaus, Offices and Headquarters, U. S. Marine Corps, April 26, 1966.

[4]Office of the Assistant Secretary of Defense (Comptroller) A Primer on Project PRIME, p. 4.

[5]U. S., Department of Defense, Directive 5118.3 (Washington: January, 1966).

Thus, Dr. Anthony was given two chores: first to develop and install Project PRIME and secondly to develop a comprehensive system for management control.

The overall system affects the entire management process and is envisioned to integrate planning, programming, budgeting, management of investment items, management of operation, accounting, reporting and auditing.[1] Two corollaries evolve from analysis of the various writings and speeches on this system. First, emphasis will be on the total costs of resources consumed and the outputs attained. Secondly, the authority to impose a workload or mission will be accompanied by the responsibility to provide resources necessary to perform assigned tasks.[2]

Goal

The goal of the Resources Management System is to ". . . provide all managers at all levels within the DOD the means by which to assure that resources are obtained and used effectively and efficiently in the accomplishment of DOD objectives."[3]

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[1]Robert N. Anthony, "The What and Why of Project Prime," An address by Assistant Secretary of Defense (Comptroller) Robert N. Anthony to Defense Management Systems Course, Naval Postgraduate School, Monterey, California, August 5, 1966.

[2]Ibid.

[3]Address by Robert N. Anthony, May 4, 1966, op. cit.

Project PRIME

Project PRIME encompasses programming and budgeting, operations and maintenance, and appropriation and fund accounting. Thus a distinction is made between the management of operations and capital acquisitions. PRIME is concerned with resources consumed (inputs) and results (outputs) obtained by responsible managers within a specified time frame or in accomplishment of a specific task. The other processes or systems provide emphasis on the items and projects being acquired.[1]

Project PRIME requires changes in the programming system. The present programming process is based upon two types of planning. The first is the preparation and continuous updating process of the Five Year Defense Plan. The second is the development of the annual budget for the current year which is the translation of the financial aspects of the programs into appropriation language. This is a reexamination of the programs in the light of overall balance and their financial feasibility.[2] Changes to the program and program element structure are required to implement Project PRIME.

Figure 9 shows a comparison of the old program structure with the new program structure. This reorganization results in the

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[1]Anthony, "the What and Why of Project PRIME."

[2]Novick, op. cit., Chapter 3.

No.	OLD PROGRAM	No.	New PROGRAM
I	Strategic Retalitory Forces	I	Strategic Forces
II	Coninental Air Missile Defense Forces	II	General Purpose Forces
III	General Purpose Forces	III	Specialized Activities
IV	Airlift/Sealift Forces	IV	Airlift/Sealift Forces (adds Army elements)
V	Reserve & Guard Forces	V	Guard & Reserve Forces
VI	Research & Development	VI	Research & Development
VII	General Support	VII	Logistics (Wholesale supply & maintenance activities)
VIII	Retired Pay	NONE:	Disappears since cost of retired pay is charge to military personnel in other elements.
IX	Military Assistance	NONE:	No number assigned even though it is independent activity. This is due to digit limitation of computers.
		VIII	Personnel Support (Training activities not associated with force elements, major elements of medical activities, and other related personnel costs.)
		IX	Administration (General Overhead Costs.)

Chart developed from A Primer on Project PRIME, pages 33-35

Fig. 9.--Comparison of Existing DOD Program Structures with the New Program Structure Under Resources Management.

[illegible]	[illegible]	[illegible]
I	[illegible]	[illegible]
II	[illegible]	[illegible]
III	[illegible]	[illegible]
IV	[illegible]	[illegible]
V	[illegible]	[illegible]
VI	[illegible]	[illegible]
VII	[illegible]	[illegible]
VIII	[illegible]	[illegible]
IX	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]

[illegible]

FIG. 9.—[illegible]

program structure being divided into two types--those activities which directly contribute to the defense posture on which independent decisions are made and those activities that are dependent on the size and position of the independent activities for determining their size and resources. The analogy involved in restructuring program elements is that there are mission program elements (basically the fighting forces) and the service program elements (the supporting forces). The mission program elements are charged with all costs including the service and support received from the service units. The service program elements reflect those costs for which the mission elements do not pay.[1] This results in full-costing procedures for those forces which contribute directly to national defense.

Operating expenses will be budgeted by program element structure. Operating expenses will include cost of military personnel and costs of operations and maintenance. With the existing appropriation structure this will require budgeting for two appropriations simultaneously. Uniform functional accounts will also be used to provide a common basis for expense reporting in all the services.[2] The major problem at this time is that Congress has not changed the way it desires to see the budget submitted. If Congress does not change the format of the appropriations then,

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[1]Office of the Assistant Secretary of Defense (Comptroller), A Primer on Project PRIME, p. 31.

[2]Ibid., p. 59.

theoretically, conversion will be accomplished at the military department level and the services will function under the new procedures.[1]

Significant Changes

Present accounting within the services is financial accounting geared to the requirements of external reporting and in most cases not readily usable to military managers.[2] Three factors appear within Project PRIME that are of significant change. At the present time the costs of military personnel are budgeted and accounted for by each service on an aggregate basis. In the Marine Corps, for example, two-thirds of its annual budget is attributable to the cost of personnel.[3] It is budgeted for by Headquarters, Marine Corps. Under PRIME all services provided by military personnel to an organization will be budgeted for and charged to that organization. The one exception to this will be the military personnel assigned to combat units. In this case each service will accumulate standard costs for each combat unit.[4]

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[1] Ibid., p. 45.

[2] Captain A. Lukeman, USMC, "Cost Accounting in the Appropriation Operation and Maintenance, Marine Corps," (unpublished master's thesis, The George Washington University, 1963).

[3] Budget of the United States Government, for the Fiscal Year Ending June 30, 1967 (Washington: Government Printing Office, 1966).

[4] Office of the Assistant Secretary of Defense (Comptroller), A Primer on Project PRIME, p. 51.

The next significant changes are the factors of expense and investment items. This is a departure from current procedures in that anything for which a commander obligates his funds is considered to be a cost or expense. In some cases it could be over a year before he receives the item for which the obligation was made. Under PRIME expense items are items that contribute to the current operation of the organization. Investment costs are associated with the acquisition of equipment and real property. The rationale in determining what is an expense or investment item is contained in Figure 10.

Changes in the accounting procedures are envisioned in light of the establishment of the uniform expense structures. Establishment of uniform accounts will provide the link between programs, budgeting, accounting and reporting.[1]

The other major change involved is extension of the working capital funds. The cost of inventories in the stock funds will be carried in suspense until time of issue at which time they will become expense items to the organizations receiving them. This results in less "free goods" being available to operating units--they will pay for what they use.[2] Industrial funds will also be expanded and for the same reasons.

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[1] Ibid., p. 60.

[2] Ibid., pp. 56-58.

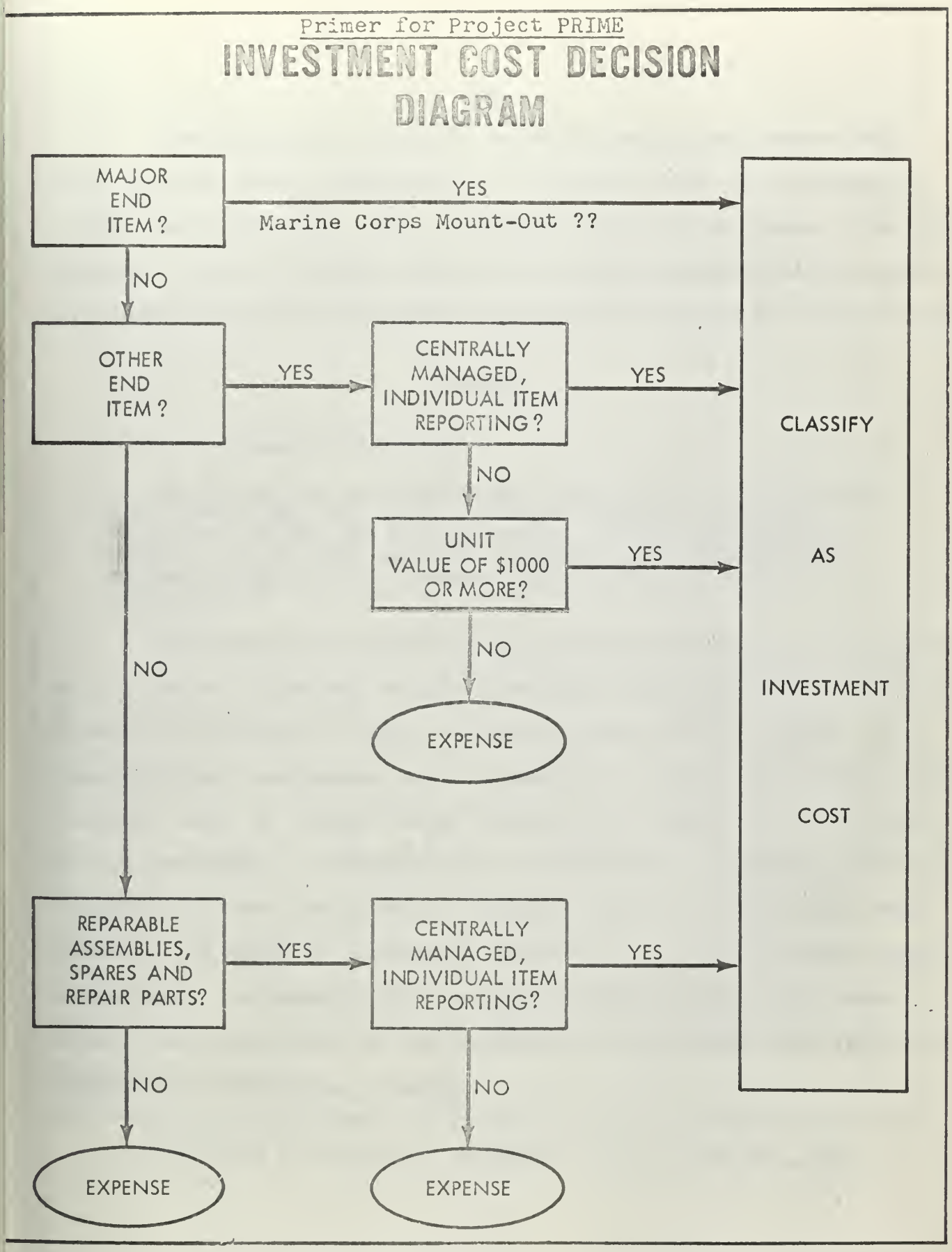

Fig. 10.--Investment Cost Decision Diagram

The purpose of PRIME is to make commanders aware of the full cost of their operations and to provide them with management tools that will enable them to compare their actual costs with their budgeted costs. It will also provide higher echelons with a means for determining that resources are used efficiently and effectively.

Summary

Dr. Anthony has stated:

> No matter how sophisticated a combination of accounts and reports may be, it is worthless unless it has two characteristics: (1) The operating manager must find it useful; (2) It must motivate operating managers to take actions which are in the best interest of the total enterprise.[1]

The purpose of the decentralization of financial management in the Marine Corps was to give commanders responsibility for their finances comparable to their responsibility in other areas. The functions they are called upon to perform in relation to their funds form the basis of Marine Corps financial management as it relates to the commanders. Conceptually the Resources Management System and Project PRIME are not greatly different than the system that now exists. The areas of difference appear to be more mechanical than conceptual. No attempt will be made to evaluate the mechanical changes involved since as the deadline for implementation approaches changes are continuing to occur.

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[1]Address by Robert N. Anthony, May 4, 1966, op. cit.

Since the FMF commands are combat units they are exempt from costing military personnel. Considering the constraints on personnel in FMF units this appears only logical. The FMF commander does not have any significant control over his personnel strengths,[1] therefore, budgeting and accounting for their costs would be just an administrative burden. The value of costing military personnel at levels above the FMF and in non-combat organizations could prove of value. Certainly the costs of military personnel must be included in the program element structure if the costs of programs are to be meaningful and useful.

Full costing is another matter. Much of the materials that FMF commanders receive are received as free goods. By having to pay for the things they use and services they receive they cannot help but be more conscious of the costs. In this same light the separation of expense items and investment items will provide the commander with a much clearer picture of his operating costs. As a result he should be able to deduce alternative ways of accomplishing the same objective and then choose the one that is the most effective and least costly. Whether or not the system will positively motivate the commander can be answered only by the test of time and in the light of its true effect on combat readiness or success in battle.

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[1]<u>Supra</u>, p. 23.

Purification of the accounting structure and unified accounts should produce the greatest advantage. Full costing and accrual accounting, as envisioned by Project PRIME, will show what current costs are and what they are closer to the time of occurrence than at present. This should provide for closer control and should also generate more accurate data for the budget. Hopefully, PRIME will integrate the budgeting, accounting and reporting process.

From this latter aspect the greatest benefit could be derived. If Project PRIME will provide a means of developing accurate cost data upon which to base budgets then a major step forward will be taken. But this step can only be taken if the new data developed contribute more than the present data in the form of justification for the Congress. From a budgetary viewpoint this becomes a question that only time and the Congress can answer.

Thus the appropriation structure becomes the major problem. If Congress feels that the new program structures will improve its control, then the appropriation structure may be changed. If conversion of the data accumulated under this new system does not prove to be readily convertible to the appropriation structure, as Dr. Anthony has stated, or if Congress does not yield, then it is foreseeable that the burden of two accounting systems could befall the Marine Corps. The ramifications of this are many. What must be remembered is that the Marine Corps is involved in matters of life and death--not profit and loss. Any system or procedure that does not contribute to combat effectiveness and success on the battlefield

is far more expensive than the cost of its implementation and operation.

The decision to decentralize financial management in the Marine Corps was a sound one. The requirement for all Marines to participate in financial management has provided a sound foundation upon which to build a financial management control system. Development of the Marine Corps Cost Model will help place financial planning on a more scientific basis. Project PRIME is another step and the Marine Corps should not find too great a change except in the mechanical aspects of accounting.[1]

Marine Corps attitude towards the new system is summed up as follows:

> The answer is quite simple--whatever the system, whatever the requirements, we will adopt it and operate it to gain and expend resources to the best interests of the Marine Corps and the United States.[2]

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[1] Interviews with C. V. Cogliano, Assistant Head, Accounting Branch, Fiscal Division, Headquarters, U. S. Marine Corps, February 3rd and 24th, 1967.

[2] Marine Corps Command and Management Presentation, op. cit., pp. II-14-II-15.

CHAPTER V

SUPPLY SYSTEMS

Background

As previously discussed, any system or procedure developed by the Marine Corps must comply with existing legislation and the regulations of the Department of Defense. A system was needed to comply with the standardized requirements of the Department of Defense Military Standard Requisitioning and Issue Procedures (MILSTRIP) and Military Standard Transaction Reporting and Accounting Procedures (MILSTRAP).[1]

In addition, the concepts of the Military Supply and Transportation Evaluation Procedures (MILSTEP), Military Standard Transportation and Movement Procedures (MILSTAMP), Military Standard Contract Administration Procedures (MILSCAP), and the Defense Supply Agency Mechanization of Warehousing and Shipment Processing (MOWASP) must be used in designing the system.[2]

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[1]Headquarters, U. S. Marine Corps, MUMMS Introduction Manual, Marine Corps Order P4400.70, June 23, 1966.

[2]Ibid.

In 1962 the Supply Department completed a study of the supply business in the Marine Corps. This study, Supply Department Study 3-62, provided recommendations for how the Marine Corps could not only keep in step with, but get ahead of the trends in the Department of Defense toward standardization, centralization, and sophistication.[1] The Marine Corps Unified Materiel Management Systems (MUMMS) and the Supported Activities Supply System (SASSY) were the results of this study.

The MUMMS System

Background

The Marine Corps Unified Materiel Management System has been defined as "an integrated supply management system which satisfied internal and external requirements through full use of modern management techniques and automatic data processing equipment."[2]

The scope and complexity of MUMMS become readily apparent when it is realized that seventeen manuals of instruction are required. One manual provides an overview of the total system, fifteen other manuals are for each of the subsystems, and one manual provides the reference for card layouts, forms, and definitions of codes and terms used.[3]

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[1] Ibid., p. A-01-3.

[2] Major R. P. Walling, USMC, "MUMMS the Word," Marine Corps Gazette, LI, No. 1 (December, 1965), p. 36.

[3] MUMMS Introduction Manual, op. cit., p. A-01-3; not all have been promulgated and are in the process of preparation.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

The purpose of centralization was to establish clear-cut lines of responsibility and authority; to eliminate duplication; and to provide a means for the supply system to be more responsive to current and future requirements.[1] In addition, automation was more readily adaptable to a centralized system. Quick access time to computers' memory banks, nano-second processing time, and the use of communication networks supported this concept.[2] The use of computers permits the use of simulation models, forecasts, probability theory, and management by exception of the thousands of items in the supply system. Automation also provides the capability to integrate the quantitative aspects of the supply operation with the financial operations.[3] The design of the system provides for simultaneous recording of all transactions in each area affected.[4]

Marine Corps Distribution System

The title "Marine Corps Distribution System" is given to the fifteen functional subsystems that comprise MUMMS. Figure 11 provides a listing of the MUMMS subsystems and their number

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[1] Marine Corps Command and Management Presentation, op. cit., p. Sup-9.

[2] Ibid.

[3] Interview with Major L. R. Seaman, USMC, Systems and Procedures Section, Supply Department, Headquarters, U. S. Marine Corps, February 13, 1967.

[4] MUMMS Introduction Manual, op. cit.

Figure 11. Marine Corps Unified Materiel Management System Subsystem Names and Number Identifiers

Subsystem Number Identifier	Subsystem Name
SS03	Inventory Control
SS04	Stores Accounting
SS05	Automated Procurement
SS06	Mechanization of Warehousing and Shipment Processing (MOWASP)
SS07	Direct Support Stock Control (DSSC)
SS08	Technical Data Management
SS09	Applications
SS10	Provisioning
SS11	War Reserve
SS12	Depot Maintenance Management
SS13	Controlled Item Management
SS14	Budget Data
SS15	Special Programs
SS16	Supply Management Information
SS17	Allotment Accounting

identifiers. The relationship of the subsystems with other Marine Corps and Department of Defense systems is shown in Figure 12. The Inventory Control Point (ICP) and the Remote Storage Activities (RSA's) are linked by the Automatic Digital Network (AUTODIN). AUTODIN also links the total system to the Defense Supply Agency (DSA) activities, such as the Defense Logistics Services Center (DLSC), Defense Supply Centers (DSC's), Defense Contract Administration Services Regions (DCASR's), and with installations of the other services where necessary. Data in each Marine Corps functional subsystem are available to any other subsystem for use in preparing reports and documents.[1]

One of the major objectives is to provide the means whereby a military unit drops a punched card requisition in a communication terminal, and the data contained on the card are transmitted electronically to the Inventory Control Point. At the ICP the computer processes the requisition, issues an order to the Remote Storage Activities to issue or ship the requested item, and provides the unit with a status report. Figure 13 depicts this process.

The Subsystems

The Inventory Control Subsystem provides centralized control of stocks, issues, receipts, and requirements. This subsystem has the ability to segregate the inventory record of the central computer by purpose, condition, project and location. It controls

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[1] Ibid.

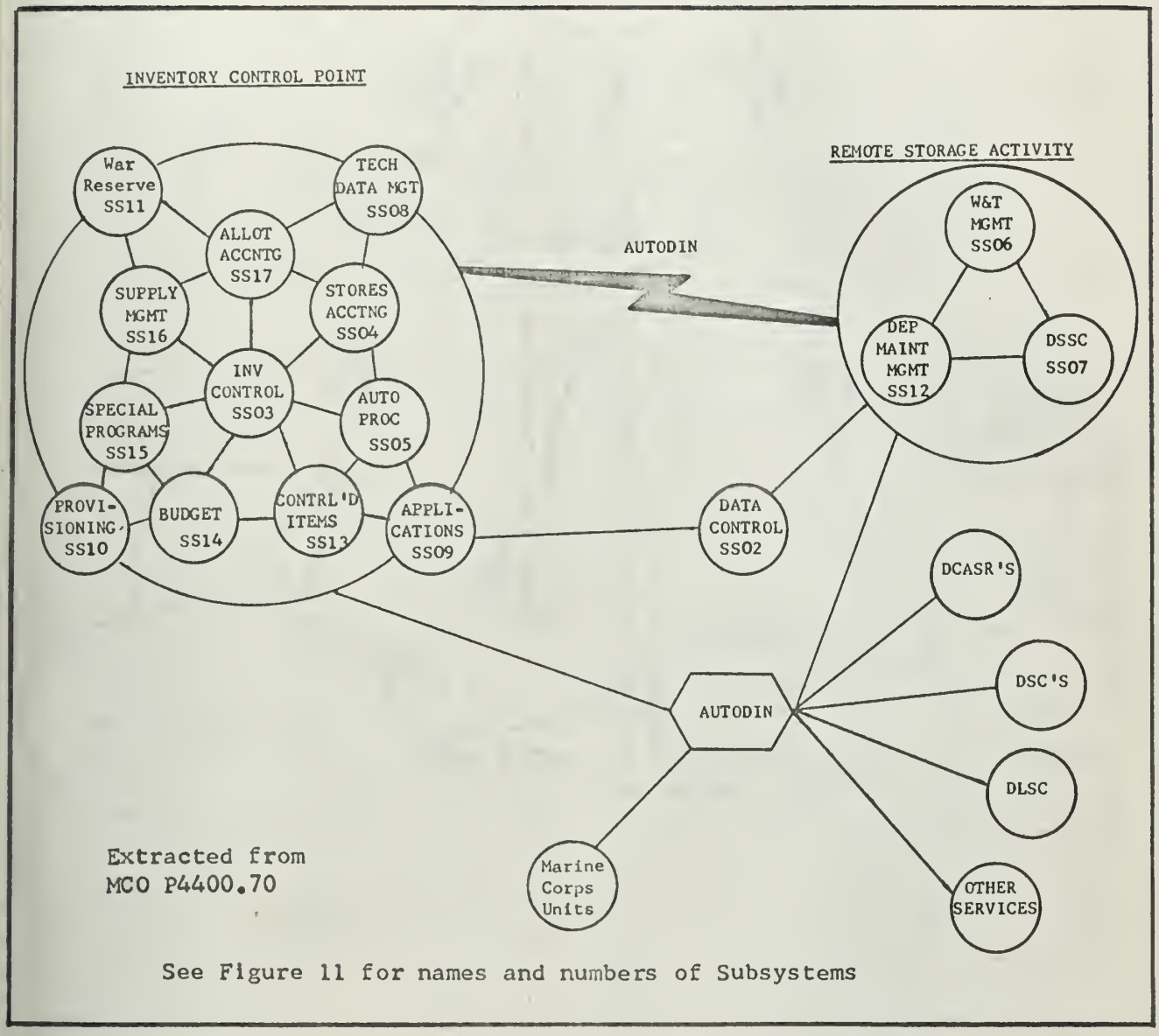

Fig. 12.--Relationship of MUMMS Subsystems with other Marine Corps and DOD Systems.

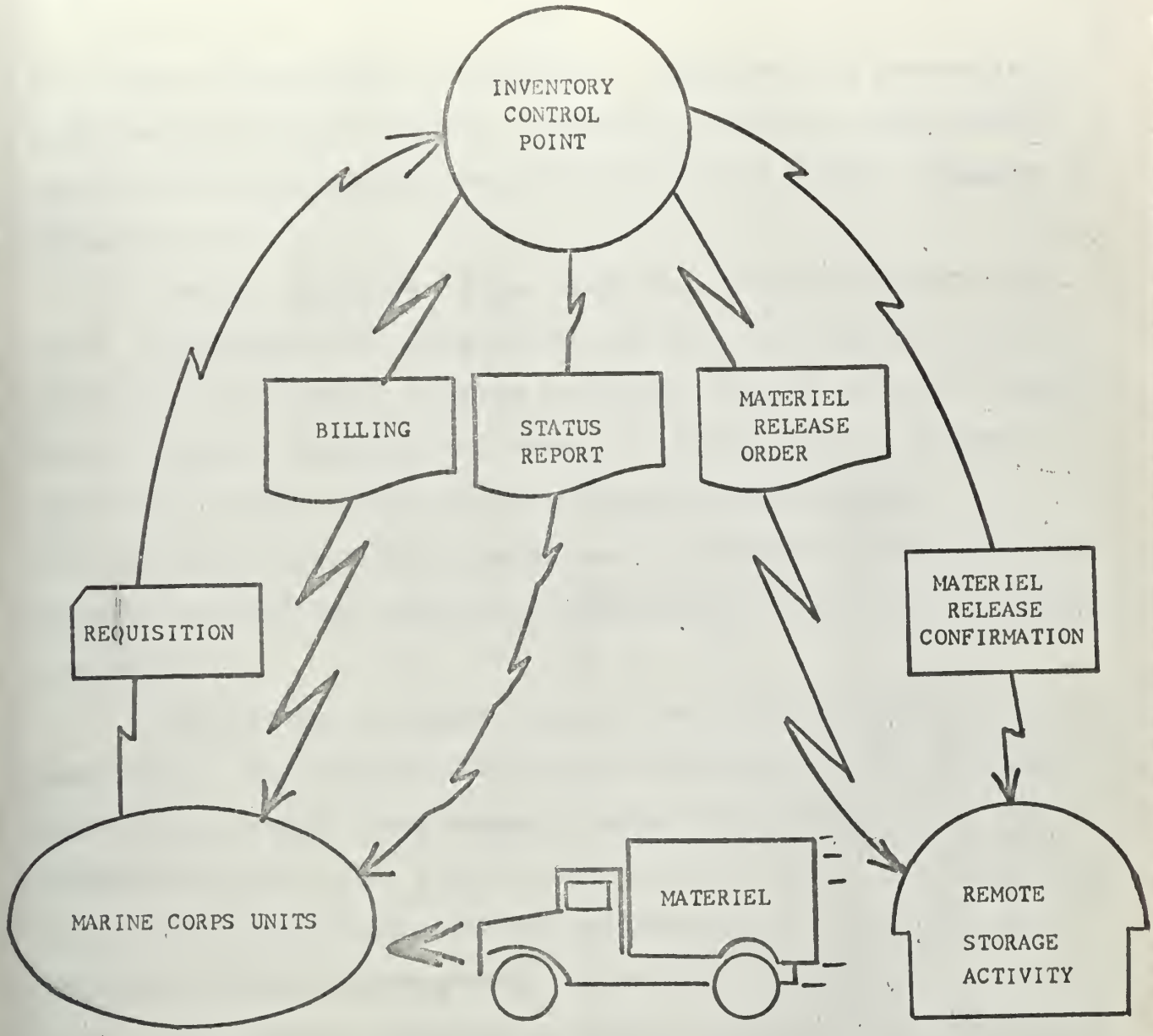

Fig. 13.--MUMMS Requisitioning Procedure

the issue and backorder of supplies. Customers are automatically provided with status reports. Demand is forecast, stock levels computed and requirements are identified from initial planning to ultimate use.

The key features of the Inventory Control Subsystem are rapid transmission of transactions and data via AUTODIN resulting in faster up-dating of records and fast response to user's needs. Use of MILSTRIP provides the means to speak the same language within the Marine Corps, as well as with other agencies, in requisitioning and issuing supplies.[1] MILSTRAP also provides the means of meeting the reporting requirements of the Department of Defense.[2]

The master inventory file is the major element of the subsystem. It is the "master memory" containing control codes, asset data, demand data, movement data, interchangeability and substitutability data, repair data, location data, and identification for any item with a federal stock number.[3] In short, it provides a fully cross-indexed, correlated catalogue.

The Stores Accounting Subsystem automatically records and accumulates all data required for financial analysis of inventory

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[1] Headquarters, U. S. Marine Corps, Military Standard Requisitioning and Issue Procedures, Marine Corps Order P4235.17A, March 16, 1965.

[2] Department of Defense Joint Regulation No. DOD 4540.2-R, "MILSTAMP" Military Standard Transportation and Movement Procedures, May 1, 1963.

[3] NUMMS Introduction Manual, op. cit., p. 8-01-3.

movement and for control and accounting of cash resources as well as financial inventory balances. Timely management reports are produced for review and decision making and for financial control actions.

The Automated Procurement Subsystem provides semiautomated requests for contract or price quotations for supplies or services for commercial purchases based upon requirements generated by the Inventory Control Subsystem. The semiautomated request consists of a printed request for quotation and a printed document containing previous procurement history; identification of potential suppliers; specification and drawing numbers; and other pertinent data necessary for the buyer to select, solicit bids, evaluate and award contracts. The key feature is the reduction in administrative lead-time due to a complete procurement package being provided the buyer.[1]

The Mechanization of Warehousing and Shipment Processing Subsystem (MOWASP) automates the procedure for shipment of supplies, receipt of supplies, storage operations, and the preparation of management reports. It simplifies the warehousing and shipping operations through elimination of unnecessary manual methods.[2] The location and shipping data; data for maximum freight consolidation, printing of shipping documents from computer files; and management reports are all provided automatically.

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[1] Ibid., p. B-03-3.

[2] Ibid., p. B-04-3.

The Direct Support Stock Control Subsystem (DSSC) records and accumulates all data required for routine record keeping, requisitioning, reporting and for development of historical data. This subsystem contains the accounts of self-service centers which provide certain classes of consumable supplies, retail clothing outlets, subsistence outlets, ammunition outlets, petroleum product outlets, and separate individual clothing outlets. Recordkeeping at these issue points is eliminated. Past demand history provides the basis of automatic requisitioning and records and reports are developed automatically. It also provides for automatic disposal of excesses and redistribution between issue points based upon programmed rules.[1]

The Technical Data Management Subsystem (TDM) establishes the policies and rules and develops the procedures related to the Federal Cataloguing Program and selected management data programs of the Department of Defense. This subsystem provides for the automation of cataloguing techniques, records of technical documentation, and the development and publishing of Marine Corps federal catalog management lists.[2]

The Applications Subsystem (APPL) provides an automated capability to identify repair parts to all of their applications to component items of equipment or to the end item of which the

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[1] Ibid., p. B-05-3.

[2] Ibid., p. B-06-3.

component is a part.[1] Peculiar and common items can be easily identified. The capability exists to identify the range and density of repair parts required to support a specific item of equipment. Various changes to publications and the ability to print parts application lists are also part of the system.[2]

The Provisioning Subsystem (PROV) assures that the initial spares, repair parts, special tools, test equipment required to initially support new items are obtained and properly distributed to the organizations receiving the new items. This subsystem, functioning through other subsystems, establishes supply support with single managers; updates application files; and causes new items to be entered into the Inventory Control Subsystem. It also prepares repair parts orders, component lists, and repair parts lists. Financial management data for budgeting are generated and the effectiveness of provisioning is evaluated.[3]

The War Reserve Subsystem (WARRES) develops the record of all materiel requirements authorized for acquisition by the Marine Corps on the day mobilization is directed. Various withdrawal plans establish requirements or inventory levels which are processed routinely in the Inventory Control Subsystem to ensure that the proper inventory reserves are protected. Upon the execution of a withdrawal plan the necessary transactions are generated to the

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[1] Ibid., p. B-07-3.

[2] Ibid.

[3] Ibid., p. B-08-3.

Inventory Control Subsystem to cause release of the required materiel.[1] In essence, the War Reserve Subsystem provides the automated means for the supply system to respond to war plans and mobilization requirements in the nuclear age.

The Depot Maintenance Management Subsystem (DEPMAN) is utilized by the Repair Divisions at the Marine Corps Supply Centers for the automatic development and processing of maintenance management information. Labor utilization, cost analysis reports, quality assurance reports, materiel requirements and usage, and historical data are developed through computer analysis of files which are kept current by employee input at remote devices. Use of the remote devices and simplified prepunched cards permits data to be obtained at the source.[2]

The Controlled Item Management Subsystem (CONITMAN) contains complete asset data for principal items and depot repairables. Requisitions for these items are compared against allowances of the requisitioner by the computer. If the requisition is within allowances it is processed; otherwise it is suspended for management action. A complete range of allowance-type requirement data are contained within the subsystem for the development of provisioning, war reserve and application requirements. A complete asset picture is recorded in the subsystem files and it also provides budgeting data.[3]

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[1] Ibid., p. B-09-3.

[2] Ibid., p. B-10-3.

[3] Ibid., p. B-11-3.

The Budget Data Subsystem extracts, accumulates, and projects information which can be summarized to meet the needs of budget and financial management reports. The product of this system is a justifiable request for funds based upon actual accrued accounting information.[1]

The Special Programs Subsystem (SPROG) is designed to provide program manager one place for control, cost information, and status of his program. Special programs are included in the system and miscellaneous management projects can be added as the need arrives.[2]

The Supply Management Information Subsystem (SMINFO) provides the focal point for collecting useful data from all of the subsystems and for summarizing it into meaningful management reports. Each subsystem includes processes for generating input to this subsystem. Four areas for reporting have been pinpointed. They are MILSTRIP workload analysis, MILSTRAP workload analysis, readiness reporting and control, and financial analysis through integrated reports.[3]

The Allotment Accounting Subsystem is a completely automated system that records funding data from the time the Inventory Control Point initiates a requisition until the funds are liquidated. This system not only provides control to ensure that the funds are not

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[1] Ibid., p. B-12-3.

[2] Ibid., p. B-13-3.

[3] Ibid., p. B-14-3.

overcommitted or over obligated but also provides all the data necessary for the preparation of local financial management reports and for such reports that the Commandant of the Marine Corps might require.[1]

Summary

MUMMS was originally scheduled for operations to commence on January 1, 1967, but technical difficulties with computers and their programs have caused the date to be moved to May 1, 1967.[2] Nonetheless when finally implemented MUMMS will integrate supply and supply financial management through simultaneous or near simultaneous recording of transactions. Requisitions will be processed within the system at the speed of light because the component functional parts of the supply system are linked together. The use of high speed computers will reduce the reaction time and will improve the accuracy of available management information data. The Marine Corps will have an integrated, automated system of centralized supply management that will provide all levels with management data.

While MUMMS provides for a highly integrated system for the overall Marine Corps distribution system the need still exists for controlled, rapid and reliable flow of supplies to and between units.

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[1] Ibid., p. 3-15-3.

[2] Interview with Lt. Col. A. C. Taves, USMC, Administrative Officer, Supply Department, Headquarters, U. S. Marine Corps, February 13, 1967.

Timely and accurate management tools are also required by the using units. These requirements have resulted in the Supported Activities Supply System (SASSY).[1]

The SASSY System

To develop all aspects of SASSY a full-time task force was established on June 15, 1966 based upon a Table of Organization dated April 21, 1964.[2] This task force functions under the staff supervision of the Quartermaster General of the Marine Corps.

Three phases were established for the task force. The first phase has been completed and the second phase is progressing.[3] The final phase is to be completed during fiscal year 1968.

Upon completion of the three phases a system will be developed that is envisioned to function as follows:

> The requisition will take the form of a simple format card delivered by mail or messenger or a message by electronic means. At Service Battalion it will be entered into a computer by punched card. The computer will then determine if assets are available within the Service Battalion to fill the requisition. If available, the system will automatically initiate action to have the requisition filled. At the same time the requisitioning activity's supply records will be updated, thus eliminating the need for 708 cards at the using unit level. All accounting and documentation such as pick-ups, drops, survey action, usage data and computation of requirements, will be done at the service unit.

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[1] Headquarters U. S. Marine Corps, The Supported Activities Supply System (SASSY), Marine Corps Order 4400.3, June 15, 1966.

[2] Ibid.

[3] Interview with Lt. Col. Faves, USMC, op. cit.

> If sufficient assets are not in stock, SASSY will then interrogate the records of other using units to determine if an excess situation exists whereby redistribution can be effected to fill the requisition. If no excesses exist, SASSY will then, because of its compatibility with MUMMS, enter the requisition into that system for processing and action. Upon ultimate issue of the materiel, no matter what its source, the unit's records held at Service Battalion would be automatically updated.[1]

SASSY will not only provide a link from the using units to MUMMS but it will provide a centralized, integrated supply system within the divisions. It will also tie the using units and Service Battalions more closely together. The Service Battalions will function not only as stockage and issue points but will also be the divisions' supply management information centers.[2]

Summary

When SASSY is implemented its interface with MUMMS will produce an automated, integrated supply system stretching almost from the frontline Marine to the desk of the Commandant. The ultimate purpose will be to improve combat readiness of the Marine Corps.[3]

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[1] Marine Corps Command and Management Presentation, op. cit.

[2] Interview with Major Seaman, USMC, op. cit.

[3] Ibid.

CHAPTER VI

PERSONNEL AND PAY SYSTEMS

People are the Marine Corps' most valuable resource. The costs of military personnel are approximately two-thirds of the Marine Corps budget.[1] Personnel and pay systems have been in existence since the first Marine enlisted, but a continuing process of improvement in the management of this manpower has been conducted. It is the new automated systems that are pertinent to this study. Personnel and military pay have been combined because of the interrelationship that exists and the integration of the functions that is occurring.

Personnel System

For personnel management the Marine Corps has two systems. "The Marine Corps Personnel System embraces all functions relative to personnel management."[2] It ". . . does not embrace matters relating to the administration of affairs. . . ."[3] Personnel

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[1] Budget of the United States . . . , op. cit.

[2] Headquarters, U. S. Marine Corps, Marine Corps Personnel Manual, Marine Corps Order P5000.3, August, 1966, p. 1-3.

[3] Ibid.

management is defined by the Marine Corps as ". . . the process of planning, organizing, directing, and supervising the procurement, development, utilization and administration of personnel."[1] It is considered to be a function of all levels of command.[2]

Personnel procedures are the essential methods by which personnel management is effected. They are a continuous process operating throughout the career of a Marine, with the exception of his procurement and separation. Since personnel management is a function of command, commanders must implement procedures in accordance with policies of the Commandant that will:

> a. Place the right person on the right job . . . .
> b. Stimulate the individual's desire to perform his duties efficiently through incentives . . . .
> c. Utilize the individual's intelligence, preferences, and aptitudes . . . .
> d. Provide the individual with opportunities for professional development . . . .[3]

The mechanics of maintaining personnel records and preparing correspondence on personnel matters is personnel administration.[4] This again is a function of command. Commanders are assisted at lower echelons by adjutants, personnel officers, etc., who are charged with the supervision of the personnel system. In effecting the policies of the Commandant three principles are followed: (1) Simplification of administration; (2) Accomplishment of speed,

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[1] Ibid.

[2] Ibid., p. 1-4.

[3] Ibid., p. 1-3.

[4] Ibid.

flexibility and uniformity of administration; and (3) Efficient use of machine records.[1]

At the headquarters level the operating managers are the Assistant Chief of Staff, G-1 (Manpower Coordinator) and the Director of Personnel. Brigadier General Raymond G. Davis, the present G-1, explains their relationship in this way:

> We say that manpower belongs to G-1 so long as we are dealing in numbers; once names are involved, it is a Personnel Department problem. The Director of Personnel recruits Marines, classifies and assigns them, promotes them, and eventually retires them. G-1 makes the estimates, sets the goals, and establishes criteria in terms of numbers and standards: how many recruits, of what qualification; how many majors, to be selected from what size zone; how many sergeants, to be assigned to what organization.[2]

There is also a close interrelationship with other staff elements. The G-1 must

> . . . work closely with the Director of Personnel on personnel policy matters, the Director of Reserve on reserve personnel matters, the Assistant Chief of Staff, G-3 on personnel training, the Director of Administration for civilian personnel, the Deputy Chief of Staff (Air) for aviation personnel matters, and with other staff agencies in personnel matters affecting areas under their individual functional responsibilities.[3]

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[1] Ibid.

[2] Brigadier General Raymond G. Davis, USMC, "Marine Manpower," Marine Corps Gazette, (July, 1966), p. 22.

[3] Ibid.

Personnel Accounting System

The second system involving personnel is the Marine Corps Personnel Accounting System (PAS). It is a ". . . system of standard procedures established for reporting, recording, maintenance, and dissemination of military personnel information and statistics."[1] The present system is based upon an item of information being reported only once. Thereafter it will be available for most requirements relating to personnel, supply and financial management.[2]

Employing data processing methods the Personnel Accounting System functions as a management tool. It gathers and processes data essential to management of the personnel program. The overall system consists of those processes by which personal and military items of information from individual's service records and related documents are reported to a Data Processing Installation.[3]

A schematic diagram of the system is presented in Figure 14. The system functions in the following manner:

> The reporting unit, which is usually the lowest administrative level at which service records are maintained, maintains and reports personnel accounting, information on individuals on its rolls. A summary card, the Individual Record Card (IRC), reflects specific information. It is the basic worksheet and is a

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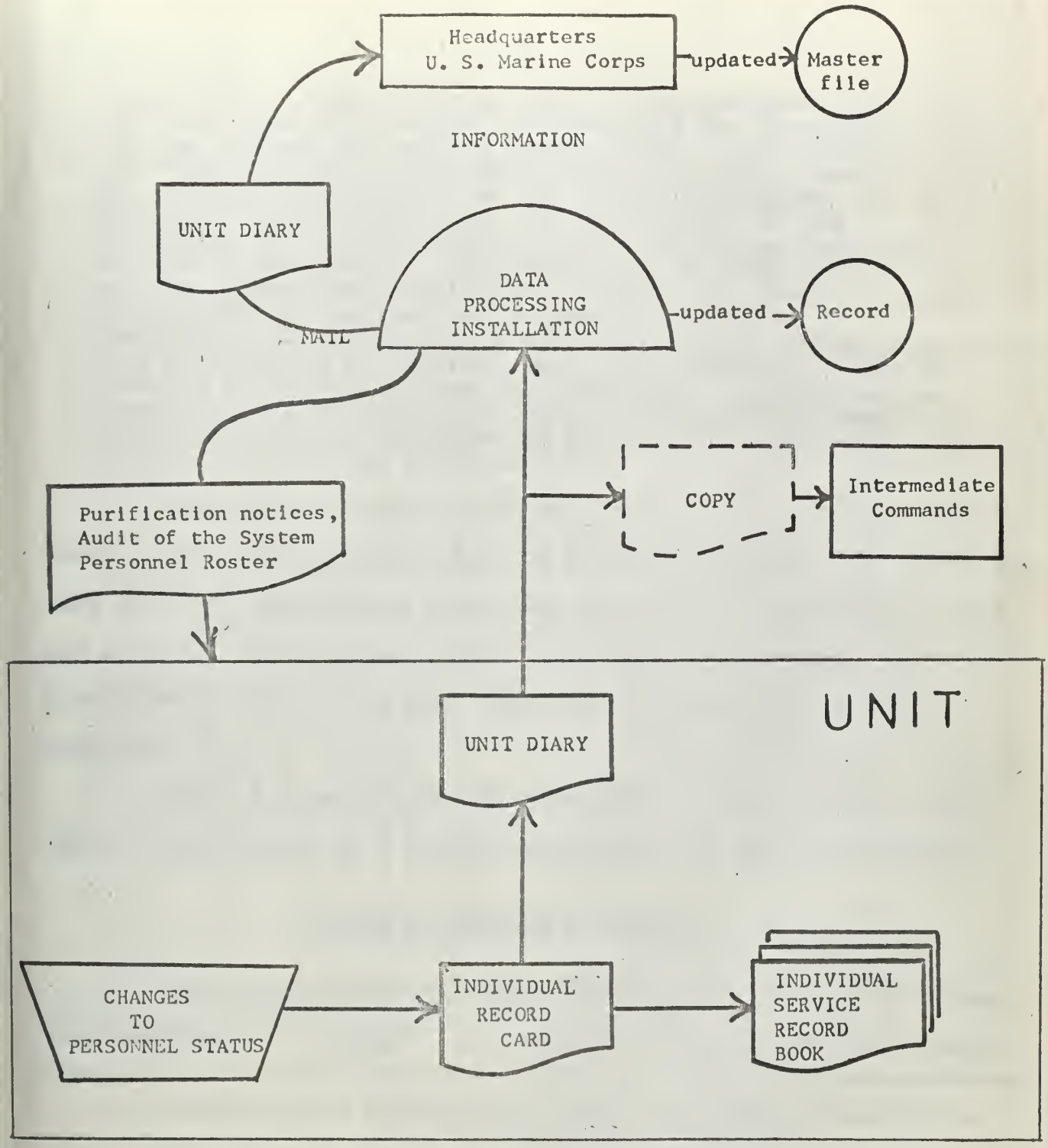
[1] Hq. USMC, . . . Personnel Manual, p. 16-5.

[2] Ibid.

[3] Ibid., p. 16-8.



(Adapted from Marine Corps Order P5000.3, Marine Corps Personnel Manual)

Fig. 14.--Schematic Diagram of Personnel Accounting System

standardized visual file of data on each person. As changes occur in a Marine's status they are recorded in the IRC and his Service Record Book. These changes are then reported on the Unit Diary. The Unit Diary is the reporting medium for the day to day history of the unit and its personnel. It also serves as the permanent historical record of the unit in the Archives of the United States. The Unit Diary is forwarded to a Data Processing Installation. At the DPI the information is audited and converted to machine language. The punched card provides input data for the performance of magnetic tape file processing. The results of processing are the creation of an updated personnel accounting tape record. A copy of each new updated record is forwarded to Headquarters where the master tape file is maintained.[1]

One point of interest is the utilization of an embossed metal plate containing key data on each individual. This plate is used to enter identifying data into the various forms used within the system. These plates help ensure that the original source data are accurate and at the same time greatly reduce the clerical workload.

These systems which are relatively unchanged since 1959 require replacement by a modern management information system.[2]

Manpower Management System

"The requirements of nearly 300,000 Marines and civilians have strained . . . [the] . . . present system beyond its elastic

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[1]Adapted from Marine Corps Personnel Manual, Chapter 16.

[2]Commandant of the Marine Corps, Letter to Comptroller of the Navy, Subject: Marine Corps Detailed Program and Time-Schedule for JUMPS Development, January 10, 1967.

limit."[1] In November, 1965, a Manpower Management Information task-force was established by G-1 and by December it became the Manpower Management Information Office (GIMMIS) within the G-1 Division.[2] The mission of this office is to conduct analyses of existing systems of personnel management to improve current capabilities. This is to be accomplished by ". . . redesigning, by patching or otherwise modifying parts of the existing system."[3] Here are a few examples of the automation programs which the GIMMIS office has completed.

> A computer program replaces certain manual computations previously used to build manning levels and requirements. . . .
>
> Scheduled for completion during September [1967] is a new T/O process which . . . will provide . . . complete bodies and recaps [the actual T/O documentation] which will then be inserted . . . behind the narrative promulgation document. More, the process up-dates the authorized strength for each parent unit and monitored command.
>
> Another new process provides authorized strength data on a tape-to-tape basis.[4]

Thus the GIMMIS is primarily concerned with the present but it is also concerned with a short range look into the future.[5] For

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[1]Brigadier General Raymond G. Davis, "Automated Manpower," Marine Corps Gazette (March, 1967), p. 44.

[2]Ibid., p. 45.

[3]Ibid., pp. 44-45.

[4]Ibid.

[5]Ibid., p. 45.

the future an Integrated Information System, Manpower Management System, I^2S (MMIS), is being developed.[1] This will be discussed later.

Reserve Systems

Closely allied to the systems just presented is the Marine Corps Reserve Data Service Center (MCRDSC). It was activated on July 1, 1966 in Kansas City, Missouri.[2] It performs the same function for the Marine Corps Reserve as the semiautomated system does for the regulars. Much more is accomplished at Kansas City, however.

At the MCRDSC two systems are functioning. These are the Centralized Automated Reserve Pay (CAREPAY) System and the Reserve Personnel Management Information System (REPMIS). These systems are interfaced on IBM 360 system computers and are providing the Marine Corps with experience with integrated pay and personnel systems on third generation computers.[3]

Thus the increased need for personnel information and improved techniques has resulted in the personnel management system moving towards full automation. Also moving toward centralization and automation is the pay system, which will be discussed next.

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[1] Ibid.

[2] Interviews with Lt. Col. F. F. Mallard, USMC, Systems Analyst, Management Systems Development Office, Data Systems Division, Hq. USMC, December, 1966 to February, 1967.

[3] Commandant's letter of January 10, 1967, op. cit.

[illegible]

[illegible]

[illegible]

Military Pay System

Background

The policies and objectives for the development, test, evaluation, installation, and maintenance of a Joint Uniform Military Pay System (JUMPS) by June 1, 1969 was promulgated by the Department of Defense on November 4, 1966. The primary goal of JUMPS is:[1]

> . . . the application of the best and most efficient management and operating techniques in a military pay system based on (1) adequate service to members; (2) maximum practicable uniformity between the military departments; (3) centralized and computerized pay account maintenance; and (4) optimum support of the planning, programming, and budgeting systems by producing and making effective use of comprehensive, accurate, and timely accounting reports and other end products. Related goals are (1) to eliminate or reduce erroneous or illegal payments, and (2) to produce from the pay data bank, data and reports now available only through special statistical and reporting methods outside of the pay system.

Fourteen basic policies were enunciated in the implementing directives. They are:

> A. Each military service will, at a single operating site for each service, establish a master military pay account for each active duty member. . . .
> B. Master military pay accounts will be maintained by electronic data processing equipment and techniques . . . with a processing capability consistent with system requirements and a capacity appropriate to programmed service strength, expandable to maximum planned mobilization strengths.

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[1]U. S., Department of Defense Instruction 7330.3, Program for Development, Test, Evaluation and Installation of the Joint Uniform Military Pay System, November 4, 1966, p. 1.

C. Where equipment used for the military pay system services other functions, total workload will be scheduled to provide for contingencies to avoid compromising effective continuity of the military pay function.

D. . . . disbursing capability will be retained at the base and installation level for effecting payments made at that level.

E. Actions and member status changes affecting pay accounts will be input to the . . . system . . . by machine-sensible media, where practicable, as close to the true source . . . as practicable.

F. Communication methods, including AUTODIN, appropriate for the data involved will be used. . . . However, the system must be capable of operating by mail.

G. Data elements and related features will be . . . uniform within and between the military departments. . . .

H. Identical forms and procedures will be used. . . .

I. Alternate methods for payment . . . will be developed for use when needed because of breakdown or destruction of centralized operations.

J. The cost of . . . current service military pay systems at all levels will be developed, recorded, and analyzed for each service. As services develop systems implementing JUMPS specifications, each . . . will develop forecasts of comparable operating and maintenance costs and JUMPS investment costs. . . . These forecasts will:

1. Compare costs of . . . current systems with the cost of performing like functions under the JUMPS.

2. Show cost of new functions under the JUMPS.

3. Contain an analysis of significant advantages or disadvantages of JUMPS from an overall management viewpoint. . . .

K. The operation of an effective, EDP-serviced military pay system . . . with the consolidation of all pay accounts by each service, provides for significant improvement in current accounting, budgeting, and statistical data recordation, collection, analysis, and use. For this reason, the . . . System will not be developed and implemented solely as a system for payment to members. . . . Rather, military departments will ensure that all affected staffs cooperate in specifying their data needs and in developing . . . systems to satisfy these needs effectively and economically. . . .

L. The data base used . . . and . . . end products will be modified and expanded, in phase with the refinement of resource management systems . . . to provide maximum production and feedback of data needed at all levels for

> both Military Personnel Appropriation and resource management systems. This will reduce or prevent a proliferation of special accounting or statistical reports to meet other system and management needs. . . .[1]

Requirements for the system were further specified in a fifty-two page directive issued on November 7, 1966. This directive specified procedures for system development, review, and approval; testing and evaluation; installation; and the development of time phased plans to meet the target date.[2]

Thus the Department of Defense has required each service to develop its military pay system in such a way that it will be a fully automated system. In addition, all services will have basically the same system but tailored to meet the specific needs of the service within DOD established criteria. The primary goal of JUMPS, as previously stated, shows that the emphasis is on producing management information.[3]

Implementation

In March, 1966 the Marine Corps commenced a requirements study for the development of JUMPS. This study was based upon

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[1]Ibid., pp. 2-4.

[2]U. S., Department of Defense Instruction 7330.4, Requirements for Development, Test, Evaluation and Installation of the Joint Uniform Military Pay System, November 7, 1966.

[3]Supra, p. 97.

drafts of the specifications desired by DOD. Depth and scope in the study were possible because the Marine Corps action officer had the experience of participating on the DOD JUMPS Committee. The study was completed on June 30, 1966 and review completed by the DOD Comptroller on September 30, 1966. Thus when the official directive was issued in November only minor revisions were necessary to the Marine Corps Plan.[1]

Experience of the Marine Corps in developing MUMMS, which utilizes computers in a continuous processing environment of multi-processing[2] and multi-programming[3] was helpful. In addition, the experience in developing the Reserve Data Services Center[4] and the interfaced personnel and pay systems was a major experience factor.[5]

The development of JUMPS involves the time frame of March 1, 1966 to March 31, 1969. At the present time computer flow charts and program decision logic is being accomplished. Sixty-seven events are scheduled with thirty-three having been completed

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[1]Commandant's letter of January 10, 1967, op. cit.

[2]More than one computer connected together for operation of the same system.

[3]More than one computer program being executed at the same time.

[4]Supra, p. 96.

[5]Commandant's letter of January 10, 1967, op. cit.

by March, 1967.[1] This detailed development is being accomplished by the Systems Engineering Branch and the Systems Programming Branch of the Data Systems Division.

Results

JUMPS will provide for accounting for military pay on an accrued basis thus collecting more meaningful management information. Of equal importance, it will provide improved service to individuals. It will furnish each individual a periodic statement of earnings and leave computations. Reduction in erroneous payments will result from improved methods of reporting events as they occur.

Summary

Of real importance, however, is the fact that the Marine Corps is not only in the process of developing JUMPS, but it is also developing a Manpower Management Information System. The JUMPS directive did not require the development of new personnel systems, but it did require the pay and personnel systems to interface. This eliminates duplicate records and files, provides for the common use of data, and permits the two systems to reconcile the data they contain.

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[1] Interviews with Lt. Col. Mallard, op. cit.

Thus with the reserve systems in operation at Kansas City excess cost and time delays can be avoided by increasing the computer capability at that site. This is due to the modular capability of the IBM System 360.[1] This approach provides a means of performing the necessary pay and accounting functions without intricate reprogramming. When the Manpower Management Information System is developed, compatibility with the existing pay system can be assured. The results are that a complete integration of systems for the regular and reserve forces on the same computer at the same site.[2] The value of this from an effective management viewpoint is obvious. For example, if the systems were in full operation and if the requirement to activate all the Marine Corps Reserve appeared, the large volume of administrative work could be accomplished by computers.

> A hydraulic action is inherent in such an integrated system, so that as the active force strength increases, the relative decreases to inactive forces (such as mobilization) permit resources (equipment, facilities, and personnel) to merely shift emphasis to greater quantities of different categories of accounts.[3]

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[1]Commandant's letter of January 10, 1967, op. cit.

[2]Ibid.

[3]Commandant of the Marine Corps, Letter to the Comptroller of the Navy, Subject: Marine Corps Time-Phased General Plan for JUMPS, December 16, 1967.

CHAPTER VII

MAINTENANCE SYSTEMS

Advances in technology and the continuous introduction of more complex equipment have created the need for improved maintenance efforts. The proper allocation of scarce resources to the maintenance problem requires that the best available information be provided to improve the decision making process.

The Marine Corps is concerned with both aviation and ground equipment. Two systems have been developed to assist in improving the maintenance management effort. The system for aviation maintenance was developed for use throughout the Naval Establishment and is in operation. The ground maintenance system is being developed within the Marine Corps and is in the early stages of development.

Aviation Maintenance System

Background

Early in 1962, the Secretary of the Navy received a memorandum from the Secretary of Defense stating that the Navy's aircraft maintenance compared unfavorably with that of the United

States Air Force. He suggested that the Navy might desire to examine the Air Force's AF 66-1 System. Trials were conducted and in 1963 the Chief of Naval Operations directed that the Standard Navy Maintenance Materiel Management System (3M System) be adopted. The 3 M System was, in effect, a refined version of the AF 66-1 System that had been modified for naval aviation.[1]

The need for a highly effective system to obtain the highest state of aircraft readiness and reliability at the lowest cost in men, money and materiel is obvious. What really brings the problem into focus is the high cost and complexity of today's aircraft. "In 1941, a fighter aircraft had 10 electronic tubes, today--580. Incidentally the most expensive electronic tube in World War II was approximately 170 dollars--today it runs as high as 16,000 dollars."[2]

The 3M System

The 3M System is composed of three basic subsystems. The Planned Maintenance System (PMS) is designed to afford the squadron maintenance officer with the tools to plan and control the scheduled maintenance of aircraft. The Maintenance Data Collection System (MDCS) is a system by which all maintenance action accomplished, or deferred, is reported and processed to produce management reports.

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[1] Interview with Lt. Col. R. H. Rash, USMC, SNMMMS Officer, Aviation Installation and Logistics Branch, Office of the Deputy Chief of Staff (Air), February 20, 1967.

[2] Marine Corps Command and Management Presentation, op. cit., p. MAI-2.

The third subsystem is Workload Planning and Control (WP&C), which is used at all levels for planning and controlling the workload.[1] Figure 15 is a schematic representation of the interrelationships of the subsystems and major elements of the 3M System.

The 3M Subsystems

The Planned Maintenance System (PMS) is used at the squadron level. Development and installation of this subsystem required the review of all sources of maintenance instructions. This review evaluated all maintenance requirements and eliminated duplicative instructions. The result was the Maintenance Requirement Card. This card contains all the information necessary to perform a particular maintenance function. It identifies the item, gives a brief description of maintenance required, provides safety warnings, lists tools and test equipment needed, and parts required. Step by step procedures are presented. In brief, the Maintenance Requirement Card is a concise maintenance procedures manual for a specific assembly. It also contains space to be used by the maintenance officer in planning and scheduling work. This subsystem also has a scheduling process which enables the maintenance tasks to be balanced evenly over a period of time based upon man-hours available as computed from the Maintenance Requirement Cards.

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[1] Ibid., p. MAI-3.

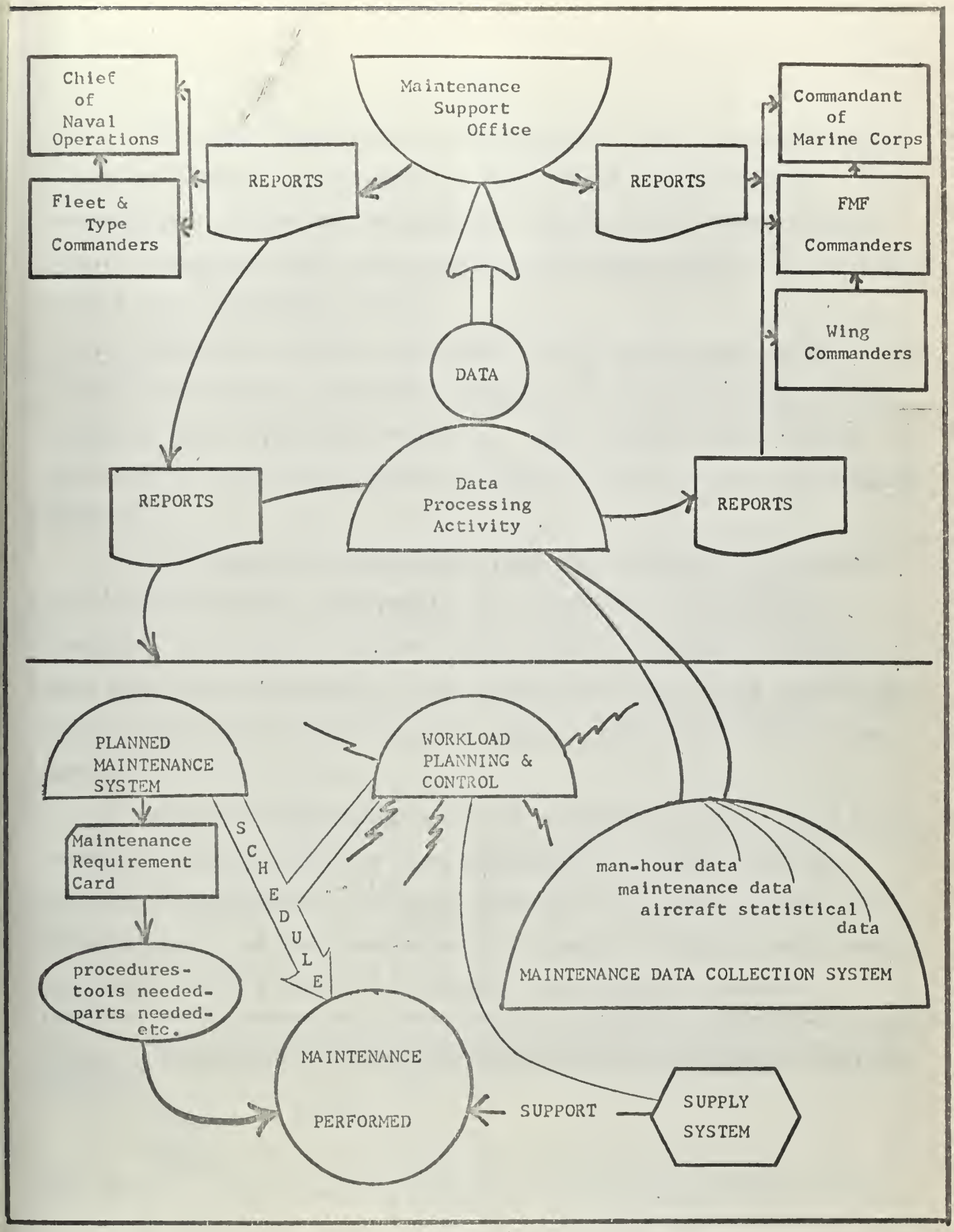

Fig. 15.--Standard Navy Maintenance Material Management System

The second subsystem is Maintenance Data Collection System. At Mechanicsburg, Pennsylvania a Maintenance Support Office accumulates, processes, and prepares reports based upon man-hour data, maintenance data and aircraft statistical data of all aircraft in the Navy and Marine Corps.[1]

Man-hour data are collected to define the size of the labor force and to permit management analysis of the differences between assigned labor and labor available. This permits determination of the effects of non-maintenance military activity on the maintenance effort.[2]

Collection of maintenance data also provides information for reports on what maintenance was performed with available manpower. Through the use of simple forms the mechanic records what equipment he worked on, the problem involved, what corrective action was taken, the parts used, and how long it took to do the job.[3]

Aircraft statistical data are collected to show hours flown, number of landings made on land or aircraft carriers, and the missions accomplished. By using computers to rapidly process the large quantity of data statistical analysis of manpower utilization, equipment failure rates, and aircraft utilization that was

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[1] Marine Corps Command and Management Presentation, op. cit. p. MAI-6.

[2] Ibid., p. MAI-7.

[3] Ibid.

[illegible]

[illegible]

[illegible]

previously impractical, if not impossible, is now possible. For example, one particular part could be failing periodically in each of several remotely based squadrons. Under old procedures this would not become evident until excessive demands were placed on the supply system for a part. The 3M System analysis of reports would show this trend early so as to permit timely management action.[1]

The Maintenance Data Collection system has generated the requirement to produce large volumes of punched cards. At one Marine Corps Air Station it was estimated that approximately 290,000 cards would be punched each month and that this volume would require forty-nine Marines to perform the key punching and verifying operations.[2] As a result, alternate methods of converting source documents into punched cards were studied. The decision was reached to use the IBM 1232 Optical Mark Page Reader (as modified).[3] This machine provides for the entry of information directly into punched IBM cards by marking with ordinary pencils on specially designed forms.[4] Authority was granted to test the machine and results of the test revealed that one operator with the IBM 1232 connected to an IBM 534 keypunch would do the work of fifteen operators and

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[1]Interview with Lt. Col. Rash, op. cit.

[2]Commandant of the Marine Corps, Letter to the Chief of Naval Materiel (MAT-26), Subject: Evaluation Report of Optical Mark Page Reader versus Key Punch/Verify Process for SNMMMS, dated March 14, 1966.

[3]Ibid.

[4]Technical Publications Department, IBM, Automatic Input with the IBM 1231 and 1232 Optical Mark Page Readers (White Plains, N. Y.: IBM), p. 1.

sixteen IBM 026/056 keypunch/verifier combinations. It would also do it at about one ninth of the cost. Improved accuracy also appeared as a benefit.[1] This improvement was the result of effort at the working level.

The third subsystem is the Workload Planning and Control System. This uses an increased amount of communications media and transportation to reduce the administrative time connected with maintenance. One example is:

> The Maintenance Control Center is a segment of the system which enables the Commander to keep abreast of, coordinate, and control daily aircraft maintenance efforts as it affects flight operations. It is usually located at the Marine Air Group headquarters or Headquarters and Maintenance Squadron Maintenance Hanger. All squadrons operating aircraft, maintain an operations and maintenance situation status console displaying up-to-the-minute status of assigned aircraft. Information and control is passed by closed circuit telephone and portable radios to and from the respective squadron maintenance offices and shops and flight line areas. Mobile repair parts vans are used to bring the parts to the mechanics, etc.
>
> The individual squadron maintenance efforts are coordinated by the squadron representative at Maintenance Control Center. However, the overall group maintenance effort is coordinated and controlled by an officer designated by the Commander to operate the Maintenance Control Center, usually the Group Maintenance Officer.[2]

Summary

The aims of the 3M System are to: (1) improve aircraft readiness and utilization; (2) improve local maintenance and materiel

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[1]Commandant's letter of March 14, 1966, op. cit.

[2]Interview with Lt. Col. Rash, op. cit.

management; and (3) improve management and budget justification.[1] To accomplish these aims, data are obtained at the working maintenance level or the source. Machines and computers are then used to correlate and summarize the data to produce timely management reports. It presents a new look at the management of men and materiel resources used in the aviation maintenance program. Better means of air weapons costing can be achieved because more accurate costs of maintaining them will be achieved because the costs of manpower actually involved in maintenance will be known. Problem areas will be identified before they reach crisis stage. Management at all levels will be provided with more information upon which to base decisions. The results ultimately should be reflected in improved aircraft combat readiness at reduced costs because resources can be channeled into the proper areas.

Ground Maintenance System

Background

It is estimated that one-third of the appropriated funds the Marine Corps receives goes to pay for the maintenance of equipment.[2] This, of course, excludes the cost of maintenance of aviation equipment which is financed by Navy funds. To ensure that the Marine Corps can compete on a cost-effectiveness basis in the future the

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[1] Ibid.

[2] Marine Corps Command and Management Presentation, op. cit.

Marine Corps established the Maintenance Systems Office on July 1, 1966.[1] This office was assigned the mission of developing Project TRUMP (Total Revision and Upgrading of Maintenance Procedures). The purpose of TRUMP is the development of modern maintenance management methods for Marine Corps ground equipment.[2] Criteria were established that the methods developed must simplify procedures for the performance and control of the maintenance functions at all levels and provide a maintenance data collection system.[3]

The Task

The exact mission or task assigned is more specific. It is:

a. Develop maintenance objectives, maintenance policies and maintenance standards for
(1) All Marine Corps furnished equipment;
(2) Navy furnished equipments in Marine Aviation units not covered by Navy 3M System.

b. Develop and install an integrated Maintenance Management System to apply to all equipment and maintenance resources utilized by the Marine Corps.

c. The design of the system will be in accord with the concept contained in the compendium "Total Revision and Upgrading of Maintenance Procedures (TRUMP)." Appropriate revisions to TRUMP to take advantage of design breakthroughs will be submitted for approval.

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[1]Headquarters, U. S. Marine Corps, Total Revision and Upgrading of Maintenance Procedures, Headquarters Order 4700.1, July 1, 1966.

[2]Ibid.

[3]Headquarters, U. S. Marine Corps. Total Revision and Upgrading of Maintenance Procedures, Headquarters Order 4700.1A, January 12, 1967.

d. Identify resources required to complete the project and request that these resources be made available.

e. Conduct periodic status presentations to the HQMC TRUMP Steering Group.

f. Submit monthly progress reports to the Chief of Staff with a copy to the HQMC Steering Group.[1]

The mission, though more specific than the broad objective of Project TRUMP, was also accompanied by the assignment of twenty-one major tasks.[2] These tasks formed the basis for the beginning of the systems study.

Organization

The Director of the Maintenance Systems Office is responsible to the Chief of Staff for the development and implementation of Project TRUMP. Because of the many tasks of the project, and their nature, active participation of the various staff elements is required. The Assistant Chief of Staff, G-4, was assigned responsibility for "coordinating matters requiring action which cross staff responsibility within Headquarters Marine Corps."[3] To provide the project director with policy guidance and to keep the interested staff elements informed of progress the "HQMC TRUMP Steering Group" was established.[4] This group is composed of:

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[1] Ibid.

[2] Ibid.

[3] Ibid.

[4] Ibid.

Assistant Chief of Staff, G-4, Chairman

Director, Management Analysis Group

Quartermaster General

Fiscal Director

(The command relationships are shown graphically in Figure 16.)

System Development

From the mission, tasks assigned, and study of the maintenance problem fifteen requirements have been developed by the Maintenance Systems Office.[1] The requirements expand the criteria originally established for the new methods and procedures of performing maintenance. These requirements are:[2]

1. Be uniform for all commodity areas--uniformly managed.
2. Be centrally managed--at the top.
3. Integrate supply and maintenance functions--provisioning.
4. Allow maximum maintenance operations utilizing low skill level personnel.
5. Provide schools commensurate with skill requirements--sequential process of training.
6. Provide incentives for retention of highly skilled maintenance personnel.
7. Establish a career program to insure completion of formal schools is commensurate with advancement of rank.
8. Develop pride in workmanship.
9. Provide a means to insure placement of the right man in the right job at the right time.

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[1] Personal briefing by staff of Marine Corps Maintenance System Office, Marine Corps Schools, Quantico, Virginia, January 26, 1967.

[2] Ibid.

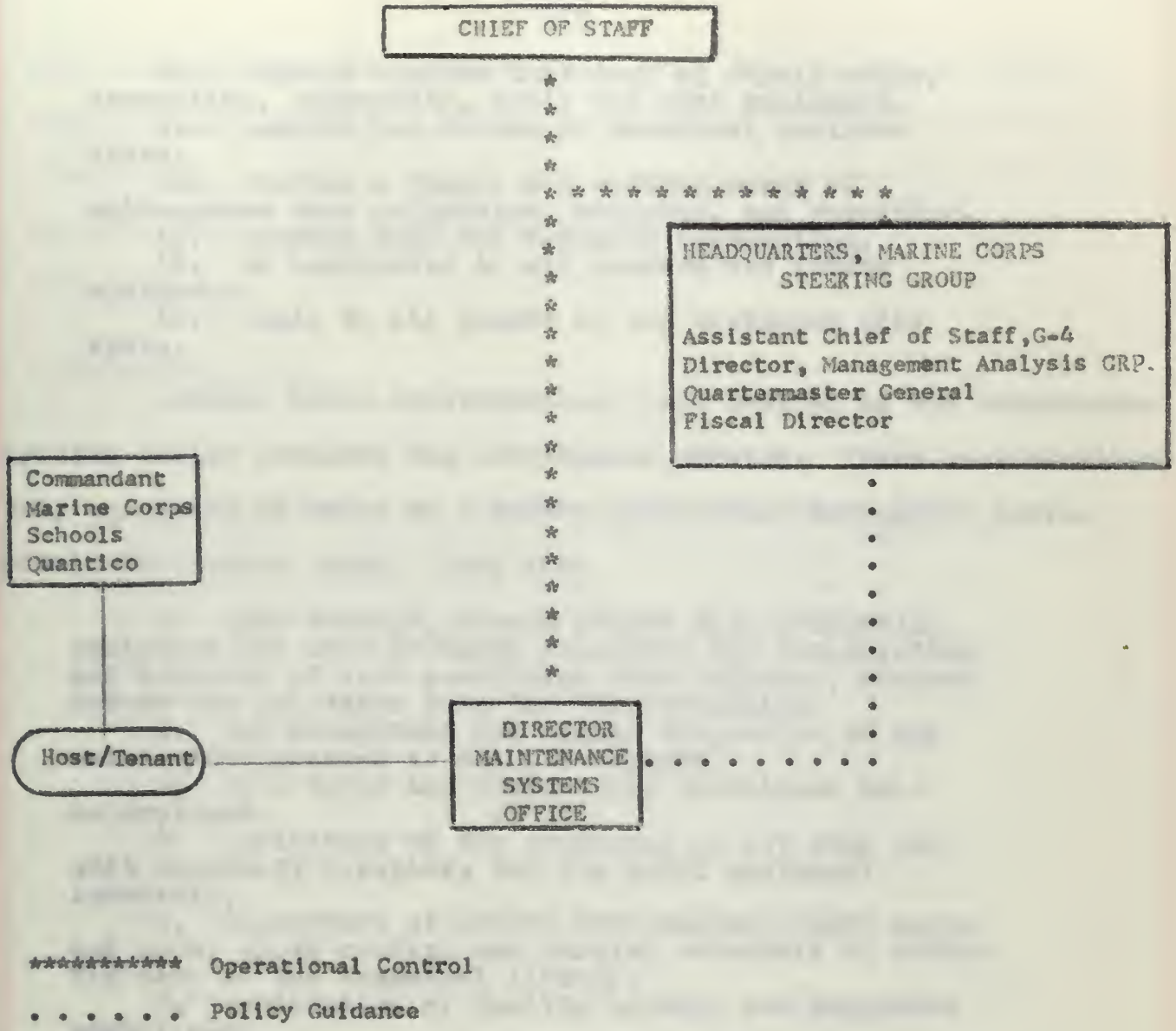

Fig. 16.--Command Relationship Chart

10. Require minimum inventory of repair parts, assemblies, components, tools and test equipment.
11. Require low volume of technical publications.
12. Provide a simple and concise means of maintenance data collection, analysis, and reporting.
13. Provide cost and resource forecasting.
14. Be applicable to all present and future equipment.
15. Apply to all phases of the equipment life cycle.

Certain basic considerations have evolved as the Maintenance Systems Office examined the maintenance problem. These considerations they enunciate as basic to a modern maintenance management system within the Marine Corps. They are:

1. Mass storage, remote access data processing equipment has made problems requiring the manipulation and recovery of vast quantities data soluable, whereas before the solutions were too time-consuming.
2. Top management has become responsive to the maintenance problem in all its aspects.
3. Life cycle and forecasting techniques must be employed.
4. Evaluation of the readiness of not only the unit equipment inventory but the total equipment inventory.
5. Employment of modern maintenance record cards and usual photo readers and display terminals to reduce the mass of the technical library.
6. Application of quality control and assurance techniques.
7. Maintainability and reliability to be established as a feature of design.
8. Positive control of the configuration of equipment.
9. Implementation of human factors engineering and the recognition of man-machine relationships.[1]

Project TRUMP is still in the stage of identifying the maintenance problem. Of interest is the fact that PERT techniques

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[1] Ibid.

have been applied to a management process and not in its usual time/cost application. Civilian contractors have been asked to submit bids on system design and other functions.[1] Bids have been received from approximately twenty firms and are being studied at this time.[2]

A Conceptual View

ZRUMP is scheduled for implementation in 1970.

> Conceptually, the Marine Corps hopes that, when implemented, a Maintenance Officer will be included at the Infantry Battalion level. At the present the maintenance supervision function is performed by the officer having technical control over the equipment (i.e., Motor Transport Officer, Communications Officer, and Supply Officer). The new Maintenance Officer will be school trained in maintenance management and will supervise the maintenance of all equipment organic to the battalion. New technical documents containing accurate time standards will aid in planning and scheduling. These same standards will have been applied in developing the Tables of Organization which authorized the quantity of maintenance personnel by specialty and rank. The training of personnel will have been towards performance of organizational maintenance and conducted by schools without so much reliance upon on-the-job training.
>
> The mass of technical publications will be replaced by a technical film library and a small, portable battery powered viewer. The reporting system will be on the exception basis and the utilization of high-speed data processing. Analysis of reports will provide information on parts suffering high mortality and failure. This information, in turn, will be passed back to the unit in the form of summary reports or improved maintenance instructions.[3]

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[1] Ibid.

[2] Interview with Major R. W. Adamczuk, USMC, Maintenance Officer, Motor Transport Branch, G-4, Division, Headquarters, Marine Corps, March 16, 1967.

[3] Adapted from the Marine Corps Command and Management Presentation and the personal beirfing by the staff of the Marine Corps Maintenance Systems Office.

The ultimate results of TRUMP are increased availability of equipment and improved combat readiness of the unit.

CHAPTER VIII

TACTICAL SYSTEMS

The ultimate purpose of the Marine Corps is combat. Tactics is the act of handling operational forces in combat. The Marine Corps has been employing tactics and has had systems for commanding and controlling its forces in battle since 1775. The nuclear age and the need for controlled response has created a need for speed and detail in the information requirements of commanders at all levels in making tactical decisions. To cope with this need, new systems have been developed or are being developed. The new systems employ high speed electronic data processing equipment, automatic displays, and digital communication links between command posts. They do not replace manual systems but supplement them; nor do they replace the judgment and decision of the commander.

Three systems are involved: one for tactical control of aircraft, one for intelligence activities, and a tactical control system for both ground and aviation.

Marine Tactical Data System

Background

The Marine Tactical Data System (MTDS) program was started in 1957 as the result of a two year air defense study by the Marine Corps Advanced Research Group. Their report concluded that neither existing nor planned air defense and control systems would meet Marine Corps requirements and recommended prompt action to obtain a system that would. The Commandant approved the study report and certified the Marine Corps requirement for a comprehensive, automatic, tactical air defense and control system.[1]

The MTDS System

The recommended system would provide the capability to control large numbers of high and low performance aircraft and simultaneously permit maximum integration and utilization of the capabilities of existing and expected weapon systems for air defense.[2] This need resulted in a decision to apply computers to Marine Air Command and Control. Routine functions could be handled by the computer freeing hundreds to make decisions. The results of

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[1]Interviews with Lt. Col. S. J. Dunwiddie, USMC, Operations Officer, MTDS Program Coordinator, Office of the Deputy Chief of Staff (Air), Headquarters, U. S. Marine Corps, February 6, 10, 13 and 17, 1967.

[2]Interviews with Major R. E. McJamey, USMC, Training/Support Officer, Office of the Deputy Chief of Staff (Air), Headquarters, U. S. Marine Corps, February 6, 10, 13 and 17, 1967.

[illegible]

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this decision are an elaborate assembly of radars, electronic computers, data processors, video screens and communication networks in an easily transported configuration.[1] By the end of fiscal year 1972, approximately $355 million will have been spent developing, testing and producing TTDS.[2]

Some of the major functions performed by TTDS are:

Automatic detection and location of targets.
Automatic acquisition and tracking.
Identification and classification.
Threat evaluation and weapon assignment.
Weapon control by operators.
Data exchange with other components of the system.[3]

The nerve center of the system is the Tactical Air Command Center. In this center the commander is provided almost instantaneous information enabling him to make decisions based upon all the current data. Command is centralized in this center with control decentralized to the Tactical Air Operations Center (TAOC).[4]

The TAOC receives target information by radar. The information is automatically transmitted to the computers. The information about the target is processed and the data translated into graphs and symbols. These are displayed on video scopes.

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[1] Marine Corps Command and Management Presentation, op. cit.

[2] Interview with Major McCamey, op. cit.

[3] Marine Corps Command and Management Presentation, op. cit.

[4] Ibid.

These displays enable controllers to identify and monitor the target and assign weapons to the target. Weapons have been recommended by the computer. Decisions and a continuous flow of computed instructions relative to the target are communicated to the assigned weapons. The assigned weapons could be manned aircraft or guided missiles.[1]

At present the first production model of the system equipment is undergoing operational evaluation. It will be implemented within the near future.[2]

A modern complex system such as NTDS creates other problems besides the ones associated with its development. To train personnel in the skills required to operate and maintain NTDS an entire training company of fifteen officers and sixty-four enlisted personnel was created. Additional civilian and military technicians were added to the Marine Corps Supply System to overhaul and repair the equipment. The introduction of approximately 5,000 new items in the supply system also created a need for additional personnel to manage the items.[3]

On the other hand a cost analysis of an NTDS Tactical Air Operations Center compared to a manual system of equivalent capabilities showed the manual system to be twice as costly.[4] Thus,

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[1] Ibid., p. TAC-6

[2] Interviews with Lt. Col. Dunwiddie, op. cit.

[3] Interviews with Major McCamey, op. cit.

[4] Ibid.

the degree of effectiveness needed was achieved at half the cost through the use of an automated system.

Summary

Introduction of MTDS has had and will continue to have considerable impact on Marine Corps operating and supporting activities. To support this operational capability, new schools have been created to train personnel in the required skills. The Supply System has been stocked to support the new system and supply depots will be provided with the personnel and facilities to enable them to overhaul and repair the new equipment. Implementation of NUMMS will help the supply system handle the logistics problems of complex systems like MTDS.

MTDS provides a significant increase in the ability of Marine aviation to perform its missions of air control and defense in a supersonic environment. It will be capable of providing an integrated missile/interceptor air defense of an designed area.

Intelligence System

The Marine Air Ground Intelligence System (MAGIS) is still in the research and study phase and is being conducted in conjunction with a joint service effort and the majority of information on it is highly classified.[1] Its purpose will be to process and interpret

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[1]Interview with Major S. Ondrako, USMC, MAGIS Project Officer, Combat Requirements and Readiness Branch, G-2 Division, Headquarters, U. S. Marine Corps, February 20, 1967.

[illegible]

[illegible]

[illegible]

tactical intelligence information. Conceptually it will have the capability of processing intelligence data whether text, graphic, photographic, verbal, or electronic.[1]

It will be limited to areas where significant gains in intelligence capability can be achieved through automation.

The equipment involved will be mobile modular shelters specifically tailored for the Marine Amphibious Force level or Division/Wing level. Contained within these shelters will be the equipment capable of:

> . . . Manual and automatic information display, control, correlation and analysis of intelligence data . . . .
> . . . Automatic data processing equipment required for the storage and retrieval of digital information. . . .
> . . . The equipment necessary for the processing of airborne collected, enemy electro-magnetic radiations which provide radar order-of battle information . . . .
> . . . The capability for processing and duplicating aerial film. . . .[2]

The shelters will include facilities designed specifically to support planning requirements of the command and will provide photographic processing and interpretation means on a timely basis.[3]

MAGIS is being designed for employment with the Marine Divisions and Air Wings. It will provide, through the use of advanced technology and computers, a means of processing intelligence information in vast quantities at high speeds.[4] It is planned

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[1] Marine Corps Command and Management Presentation, op. cit., p. TAC-7.

[2] Ibid., pp. TAC-8-9.

[3] Ibid.

[4] Interview with Major S. Ondrako, op. cit.

for employment in the 1968 to 1972 time period.[1]

Marine Tactical Command and Control System

Background

What impact would advanced technology have on the processes of tactical command and control on the battlefield in 1985? How could this advanced technology be harnessed to help the Marine Corps be a more effective combat force? Answers to these types of questions have been being studied for the last several years by the staff at Headquarters, Marine Corps, the Marine Corps Landing Force Development Center, Stanford Research Institute, Informatics Incorporated and the Office of Naval Research.[2] The results of this study have been the Marine Corps Tactical Command and Control System (MTACCS). Study has not been completed and the system is still in the conceptual design stage.[3]

The Concept

MTACCS can be considered as an integrated system concept but in actuality two concepts emerge. First is an integrated system concept which provides tactical command and control support for the Marine Expeditionary Force Commanders, Division Commanders and Wing

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[1] Marine Corps Command and Management Presentation, op. cit.

[2] Interview with Lt. Col. A. F. Thomas, USMC, Ground Systems Officer, Command and Control Branch, G-3 Division, Headquarters U. S. Marine Corps, February 24, 1966.

[3] Ibid.

Commanders during all five phases of amphibious warfare. This includes the support rendered the staffs and subordinate commanders.[1]

The integrated concept provides a system composed of several subsystems operated as an entity. Any subsystem may be located as close to another or as far apart as the communication environment will permit. Each subsystem normally communicates with other subsystems with which it must exchange information; but each subsystem will perform its tasks, though possibly less perfectly, without being connected to any other subsystem.[2]

The Subsystems

Even though the system will use many common equipments and computer programs it can be subdivided into five subsystems. These are:

1. Tactical Combat Operations (TCO) Subsystem.
2. Tactical Air Operations Subsystem.
3. Marine Integrated Fire and Air Support Subsystem (MIFASS).
4. Marine Integrated Personnel and Logistics Subsystem (MIPLOGS).
5. Communications Subsystem.[3]

In addition, the Marine Air Ground Intelligence (MAGIS) which is also under development, could be added; but MIFASS must

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[1] Marine Corps Command and Management Presentation, op. cit., pp. TAC-11-TAC-12.

[2] Third Interim Report, Marine Corps Tactical Command and Control (MTACCS) Study, Tactical System Concepts for 1975-1985, Vol. 1 (Sherman Oaks, Calif.: Informatics, Inc., July, 1966), p. I-3-1.

[3] Ibid.

only interface with MAGIS, rather than have MAGIS as an integral part.[1]

The Tactical Combat Operations (TCO) Subsystem deals with the automated aids provided to the general staff sections at the division level or higher. Various reports and files must be maintained in each section and the TCO Subsystem will provide semi-automatic message reception, analysis and data storage. Data will be rapidly retrieved in more complete detail possible than by manual techniques. A complete record of all messages in their full text will be maintained.[2]

Those functions peculiar to aircraft command and control will be under the Tactical Air Operations Subsystem. This system will handle such functions as anti-air warfare, close air support, air traffic control and terminal aircraft traffic control.[3] Initially it appears that this subsystem duplicates MTDS but MTACCS is in the design study stage and is planned for the 1975-1985 era.

Closely allied to the Tactical Air Operations Subsystem is the Marine Integrated Fire and Air Support Subsystem (MIFASS). MIFASS consists of those automated aids provided to command centers dealing with supporting arms. MIFASS covers two specific areas:

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[1]Interview with Lt. Col. Thomas, op. cit.

[2]Third Interim Report MTACCS, op. cit., p. I-3-4.

[3]Ibid., p. I-3-5.

[illegible]

[illegible]

[illegible]

"(1) Coordination of supporting arms and monitoring of artillery, naval gunfire, and direct air support; and (2) fire planning and the tactical and technical control of supporting fires."[1] MIFASS will have its primary coordination point at the divisions' Fire Support Coordination Centers and the air wings' Direct Air Support Centers. Tactical and technical control of artillery fire will be performed at the artillery units' Fire Direction Centers.[2]

The broad complex areas of personnel administration and logistics in a battlefield environment will be processed by the Marine Integrated Personnel and Logistics Subsystems (MIPLOGS). The MCTACO System will have two MILPLOGS centers within Marine Expeditionary Force size units. One will operate within the ground service unit and one within the aviation service group. MIPLOGS will perform those functions currently being performed by the FMF Data Processing Platoons. In addition, functions will be automated in a tactical environment that were previously not accomplished. These are the functions of logistics, maintenance scheduling, transportation control, allocation of resources, embarkation planning, etc.[3]

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[1] Ibid., p. I-3-7.

[2] Ibid.

[3] Ibid.

These subsystems will be tied together by the Comsunication Subsystem. This subsystem will provide the necessary voice and digital communications between the other subsystems.[1] The Communication Subsystem will have the following operational characteristics:

> 1. Remote entry devices will be able to interrogate the computers and to make use of their processing capability.
> 2. Messages will be automatically routed between command centers and within command centers.
> 3. Transmission of all past . . . messages will provide for data base recovery.
> 4. Computers will be able to directly exchange data.[2]

Figure 17 provides a schematic representation of the relationships of the MTACCS subsystems and the systems concept. The MTACC System is envisioned to consist of modular equipment mounted in mobile huts. Thus a building block principle is applied to permit contraction and expansion of the exact configuration of equipment to fit the operational situation. Each of the units would be small and easily transportable by truck, landing craft, or by helicopters.[3]

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[1] Marine Corps Command and Management Presentation, op. cit., p. TAC-15.

[2] Third Interim Report MTACCS, op. cit., p. I-3-8.

[3] Marine Corps Command and Management Presentation, op. cit., p. TAC-8.

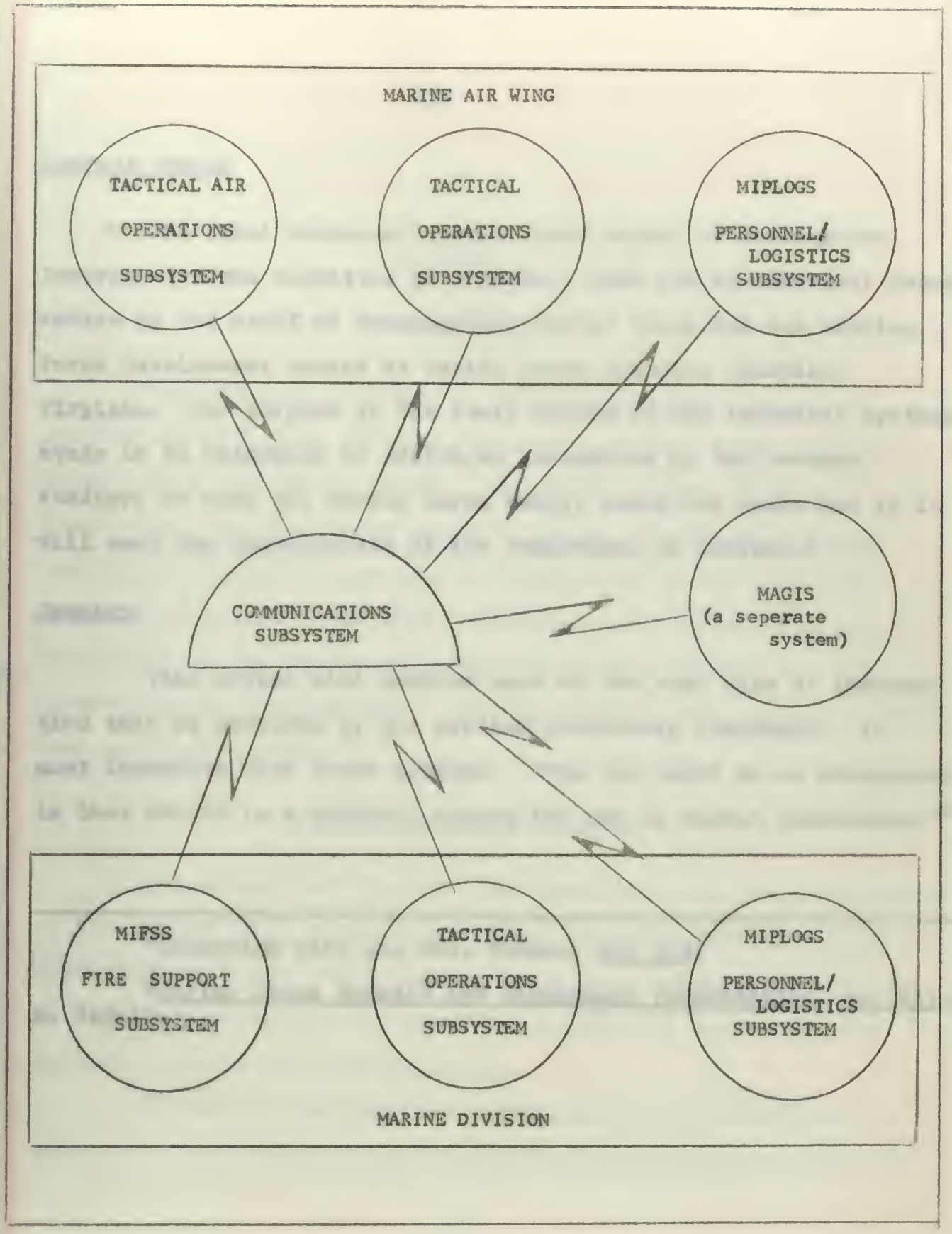

Fig. 17.--Marine Tactical Command and Control System

Current Status

The final technical system study report of Informatics Incorporated was submitted in December, 1966 and is currently under review by the staff of Headquarters Marine Corps and the Landing Force Development Center at Marine Corps Schools, Quantico, Virginia. The purpose of the staff review of the technical systems study is to determine if MTACCS, as envisioned by the various studies, is what the Marine Corps really wants and needs and if it will meet the requirements of the Department of Defense.[1]

Summary

This system will produce much of the same type of information that is provided by the systems previously discussed. It must interface with these systems. "The key point to be remembered is that MTACCS is a tactical system for use in combat operations."[2]

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[1] Interview with Lt. Col. Thomas, op. cit.

[2] Marine Corps Command and Management Presentation, op. cit., p. TAC-10.

CHAPTER IX

OTHER SYSTEMS

The previous chapters have presented descriptions of systems classified in various functional areas. Other systems exist within the Marine Corps. The whole process of staff functioning can be classified as a system. There are systems, however, that provide management information to the Commandant or to field activities that warrant examination. These systems are classified by the Marine Corps as information systems but all systems provide information. For this reason they are classified here as "other systems."

Readiness Reporting System

The responsibilities of the Commandant for the performance of the Marine Corps require timely and detailed information on the capabilities of the Fleet Marine Forces to execute their missions. He is also responsible for providing support to the World-Wide Military Command and Control System.

To fulfill the need for information on the readiness of units the Fleet Marine Force Operational Effectiveness Reporting

System exists.[1] This manual system requires unit commanders within the Fleet Marine Force to furnish copies of their plans and orders; reports on personnel, training; the status of logistics; and the commander's evaluation of his command's readiness for combat.[2]

Four distinctive features are:

> (1) . . . It reports anticipated as well as current deficiencies and problems. . . .
> (2) . . . There is only one standard of readiness for the Marine Corps Combat readiness. . . . Fleet Marine Forces must be combat ready at all times. . . .
> (3) . . . Reports are in sufficient detail and contain sufficient information so that through timely corrective actions . . . units can be maintained in the highest state of readiness without any erosion. . . .
> (4) . . . System lends itself to comparison with the readiness reports which are sent from . . . Fleet Marine Force through the fleet and theatre commanders, to the Joint Chiefs of Staff.[3]

The staff at Headquarters believe it is an excellent system. "The Secretary of Defense was briefed on it and he . . . was impressed. But like every other system, it is in constant need of refinement and improvement."[4]

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[1]Headquarters, U. S. Marine Corps, Fleet Marine Force Operational Effectiveness Reporting System, Marine Corps Order 3000.2A, September 8, 1966.

[2]Ibid.

[3]Ibid.

[4]Marine Corps Command and Management Presentation, op. cit., p. READ-4.

Design of a new improved readiness reporting system has been accomplished. It is called MARES, the Marine Corps Automated Readiness Reporting System.[1] It makes use of improved techniques and equipment that are presently available. Initially only the personnel readiness reporting aspects are being implemented. Upon completion of system design all aspects will be included.

The major objective of MARES is to provide a single system for the Fleet Marine Force, Reserve and the Supporting Establishment--a single system that is to provide timely, accurate information with an enlarged automatic analysis capability, but with reduced workload.[2]

One of the problems in an automated system is to get the information into a form that can be used by the machine.[3] The MARES personnel status report does this at the source of data. The reporting unit does this because the report form is an optical mark page reader form requiring only that the right block be marked with a pencil. Figure 18 is an example of this type of form. Figure 19 is an example of the narrative report form. The narrative report form preserves command prerogative in that it permits the commander to support his judgments with a personal

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[1]Ibid., p. READ-6.

[2]Ibid., p. READ-5.

[3]Robert H. Gregory and Richard L. Van Horn, Automatic Data Processing Systems: Principles and Procedures, 2nd ed. (Belmont, Calif.: Wadsworth Publishing Company, Inc., 1960), p. 625.

MCO 3000.2A
18 Jun 1964

FLEET MARINE FORCE READINESS REPORT

PERSONNEL STATISTICS - Type 112

ADMINISTRATIVE REMARKS

REPORT TYPE: 1 1 2

REPORTING UNIT CODE: 1 2 1 2 0

PERSONNEL READINESS JUDGEMENTS

CURRENT STATUS JUDGEMENT: 2

WILL REACH NEXT HIGHER CATEGORY: 3 1 M A R 6

WILL REACH NEXT LOWER CATEGORY: 3 1 M A R 6

CRITICAL MOS's: 3 5 1 6

CRITICAL MOS's (continued)

USER INSTRUCTIONS

1. Marine Corps Order of 3000.2 series applies.

2. Personnel Status Reporting consists of:
   a. Form 111 - Required each report.
   b. Form 112 - Optional, as required/desired.
   c. Form 110 - Optional, as required/desired.

3. To complete a report:
   a. If a form is used as required/desired, items marked by asterisk (*) must be completed.
   b. All other items will be used only as change occurs in information.
   c. If an item marked by double asterisk (**) is used, narrative will normally be submitted to support.
   d. Information ust be recorded in center blocks and it must be coded (numbers require one mark percolumn, letters require two.)

COMMANDING OFFICER's AUTHENTICATION

This report includes form(s): 111 ☒, 112 ☐, 110 ☐
Information and coding is certified correct.

Unit Commander: A.B. SEE

(This form is an example only. Current form in use is specified in Marine Corps Orders.)

Fig. 18.--Readiness Report Form

FLEET MARINE FORCE READINESS REPORT
NARRATIVE (MULTIPLE USE)

REPT TYPE	RUC	LINE	MESSAGE TEXT
1 2 3	4 5 6 7 8	9 10	12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
		01	
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		29	
		30	

USER INSTRUCTIONS

Report type is identified in Marine Corps Order of 3000.2 series. Use in columns 1-3.

DATA SERVICE INSTRUCTIONS

Key-punch information on yellow forms only.

Forward all forms to HQMC

Columns 1-8 each card or line of this message contains same data as that of line #1.

This sheet accompanies readiness report type(s) _____ for this unit.

Date: _____

Completed report verified by:
Unit Commander : _____

(This form is an example only. Current form in use is specified in Marine Corps Orders.)

Fig. 19.--Fleet Marine Force Readiness Report Narrative

touch. The narrative is transformed into machine language and then reproduced at Headquarters exactly as it was submitted in the field.

Once an initial report is submitted for a unit only changes need be reported. These changes, when reported, are compared against the previous week's report. Any major changes are exception items brought to the commanders' attention.

Figure 20 is a simplified schematic portrayal of how the MARES Personnel Status Report is handled. Operating in the alternative primary means of teletype a detailed report of the readiness posture of a unit can be on the desks of the staff at Headquarters, Marine Corps within forty-eight hours from anywhere in the world.[1]

Embarkation System

Background

The conduct of an amphibious landing against a hostile shore is one of the most complex military operations that can be executed. Because of its complexity its planning and execution must be carried out in the utmost detail. In the simplest of terms, the heart of the matter is that when the amphibious assault starts everything must come off the ships in the order needed and when needed. If there were an unlimited amount of shipping this would

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[1] Marine Corps Command and Management Presentation, op. cit., p. READ-10.

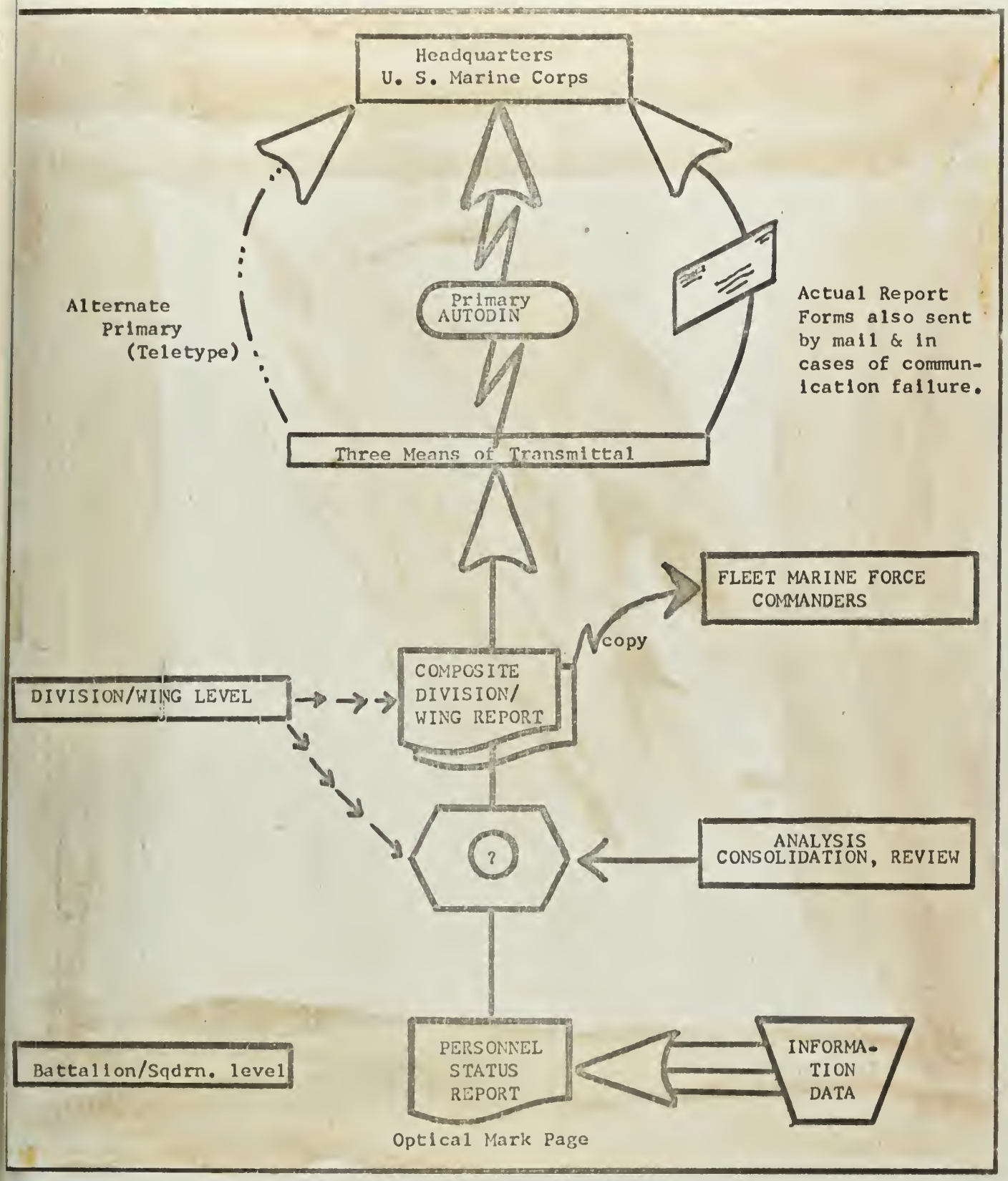

Fig. 20.--Flow of MARES Personnel Status Report

be no problem, but there is a limit. This constraint makes it necessary to load the ships at their point of departure so they can be unloaded during the assault in the proper sequence. At the same time the capability must exist to call for specific items which can be extricated from the holds of the ships in time to be useful.

To load the ships to meet this criteria means that quantitative data on everything to be embarked must be compiled. In the past this has been accomplished by manual computation of data. It is easy to imagine the vast combinations and calculations involved. As a result of the need for rapid response to meet the threats that exist now and in the future the cumbersome, time-consuming computations created a need to use automatic data processing equipment.

Mechanical Embarkation Data System

The Mechanical Embarkation Data System (MEDS) was developed by Fleet Marine Force, Atlantic and implemented by all units on June 30, 1966.[1] MEDS is not a fully developed system but it does provide the machine language data base upon which a fully automated embarkation system can be based.[2] At present it transposes and

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[1]Fleet Marine Force, Atlantic, Mechanical Embarkation Data System, Fleet Marine Force, Atlantic Order P3120.6, June 30, 1966.

[2]Interview with Major Roy A. Krieger, USMC, Plans and Operations Branch, G-4 Division, Headquarters, U. S. Marine Corps, March 2, 1967.

simplifies the existing manual embarkation methods and some supply procedures into computer format for use with the IBM 1401 computer. This was accomplished by combining the expertise of an embarkation officer with the talents of a computer expert which was considered ". . . the only way that the computerization of an operational function can be successfully accomplished in any reasonable period of time."[1]

Each Marine unit has a deck of cards reflecting each man in the table of organization and each item of equipment. As the units are alerted for embarkation, the cards of noneffective men and equipment are deleted and the remaining cards are then processed.[2] From these cards the necessary tables are easily compiled. Besides the standard Unit Personnel and Tonnage Tables and Consolidated Embarkation and Tonnage Table it also produces a Weapon Count Summary. In addition it combines three other manually prepared documents--the Unit Cargo Manifest, the Cargo Loading Analysis Form and the Vehicle Summary and Priority Table--into a Consolidated Personnel/Supplies and Equipment Table. The PS and ER table contains lists and totals of personnel by rank; personal baggage data; cargo by nomenclature, cubic space, weight and quantity in the same sequence as contained in the Unit Personnel and Tonnage Tables. Also for each vehicle it shows dimensions and net weight

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[1]PMPLANT O P 3120.6, op. cit.

[2]Interview with Major Krieger, op. cit.

plus its loaded cargo by nomenclature, cube and weight, and in addition provides the gross weight.[1]

Without going deeper into embarkation procedures and techniques it suffices to say that MBDS requires no additional workload or information and through the use of automatic data processing it eliminates the present cumbersome and time-consuming methods required to maintain and use embarkation data.

As the system is operated, additional experience will be gained and improvements implemented. To the planners there is now available more information in usable form than ever before and the future looks even brighter.

Sometime in the spring of 1967 an attempt will be made to connect the MBDS and the Navy Amphibious Data System (NADS). NADS is the result of the development of a computer program to provide detailed shiploading models. At present the characteristics of all amphibious ships are being recorded in the NADS data bank. The program at present will provide a machine listing of the placement of individual vehicles in holds, but the model is proceeding towards incorporating a total combat loading capability. With the advent of computer manipulated graphic displays ships stowage diagrams may some day be prepared automatically. More importantly, the utilization of such techniques as linear programming in computing optimum

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[1] Ibid.

loading, etc. may be developed and as a result overall combat effectiveness improved.[1]

Marine Corps-Wide Project System

On November 10, 1966, a system was instituted for providing ". . . meaningful and timely information in a concise format to the Commandant on the progress of programs of Marine Corps-wide significance."[2] Programs to be included in this system have one or more of the following characteristics:

(1) High cost.
(2) Critical to the performance of the Marine Corps mission.
(3) Highly controversial.
(4) Of specific interest to CMC.[3]

Projects are under the purview of appropriate staff elements and specific subjects are assigned by the implementing directive. The cognizant staff elements are required to furnish the Director, Management Analysis Group with the necessary data for charting and short word descriptions to explain the essentials of what has occurred and what is planned for the future. Not included in this system are projects more related to the headquarters. These are included in the Chief of Staff Project reporting system.

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[1] Ibid.

[2] Headquarters, U. S. Marine Corps, Marine Corps-Wide Project List, Headquarters Order 5000.0, November 10, 1966.

[3] Ibid.

Chief of Staff Project List

The Chief of Staff Project List is a means of keeping the Chief of Staff informed on the current status of staff action pertaining to designated projects under consideration by the headquarters.[1] This is a manual system,or more properly, a procedure in which a Project Recap Sheet lists all projects assigned a staff element. Once the decision has been reached by the Chief of Staff that a project should be placed on the Project List it is assigned a control number and the project listed on the appropriate staff element Project Recap Sheet. The staff element then receives a Project List Sheet which informs them of the project number, subject of the project, action required, deadline for completion, and other interested staff agencies. The agency receiving the Project List Sheet commences taking appropriate action. It submits a Project Report on the first and third Friday of each month. This report includes the current status of the project and a resume of future plans or actions.[2] Though not an elaborate system it does provide the important function of keeping top management informed.

A similar process called "Spindle Files" is provided to keep the Commandant, Assistant Commandant, and Chief of Staff informed. This process requires the major staff elements to submit a file folder at the end of each week with "New Business" on the left side and "Action Completed" on the right side. The "New Business" side

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[1]Hq. USMC, Headquarters Manual, op. cit., p. 25-13.

[2]Ibid.

contains copies of correspondence or other material setting forth significant problems received during the week. The "Action Completed" side contains copies of significant outgoing correspondence not previously seen by the Chief of Staff. Again, a simple procedure or system for keeping top management informed.[1]

Summary

The majority of Marine Corps systems can be classified into functional categories. These other systems, however, cross functional lines, or require information from the functional systems. MARES and MEDS require information from both the personnel and supply systems. Systems such as the Marine Corps-Wide Project System and the Chief of Staff Project List can require information from every functional area. The important aspect of these latter systems is the emphasis in both of significant matters. The scope and breadth of Marine Corps activities require the top echelon to work on a very high exception level.

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[1] *Ibid.*

CHAPTER X

COMMAND AND MANAGEMENT OF SYSTEMS BY SYSTEM

Emphasis within the Defense Department has been towards more and more centralization. Leavitt and Whistler in their prophesy, "Management in the 1980's," stated that, ". . . information technology will make centralization much easier" and ". . . if centralization becomes easier to implement, managers will probably revert to it."[1] Burck reached the same conclusion when he stated:

> The computer is now radically altering the balance of advantage between centralization and decentralization. It organizes and processes information so swiftly that computerized information systems enable top management to know everything important that happens as soon as it happens in the largest and most dispersed organizations.[2]

For the military, however, there are other reasons of far greater importance. They are:

> The ever-present possibility of nuclear devastation has created an awesome yardstick against which every military and diplomatic move must be measured. The threat of escalation and the doctrine of flexible response have blurred the line between "political" and "military" action.[3]

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[1]Harold J. Leavitt and Thomas L. Whistler, "Management in the 1980's," Harvard Business Review (November-December, 1958), p.43.

[2]Gilbert Burck, "Management Will Never Be the Same Again," Fortune, August, 1964, p. 126.

[3]Colonel Robert P. Hagen, USA, "Military Commanders Must Learn That Command and Control Systems Can Aid Art of Command," Armed Forces Management, IX, No. 10. p. 151.

> It is the untoward circumstances which occur and which might escalate the war out of control that have to be commanded and controlled at the highest levels.[1]

This has been the reasoning for centralization in the military operational area, but efficiency and cost reduction have been the reasoning in the other areas. Coupled with this centralization has been the requirement to coordinate and integrate management information systems.

For the Marine Corps the question has not been whether there is a valid need for fully integrated systems; interrelation of systems has been directed.[2] Nonetheless, the requirements for response to higher authority have created the need for the Commandant to have more information, with greater detail, upon which to base his responses. This need has focused attention upon information systems, or more accurately, a totally integrated management information system.

The Total System Concept

In any endeavor there is certain information required to perform the functions necessary to accomplish organizational goals. Some of the information is identical for all functions and some is

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[1] "Effectiveness, Responsiveness of National Command System Vital to U. S. Security," Armed Forces Management, XII, No. 10, p. 43.

[2] L. H. Kuhl, "Management Information Systems to be Coordinated," Navy Management Review (February, 1966), pp. 11-13.

peculiar to a particular function. Ideally then, it should be possible to develop an all-encompassing system that collects information once, processes it in accordance with established criteria, and produces information useful to decision makers in accomplishing the goals of an organization. Anthony writes:

> The eventual goal . . . is integrated data processing--the automatic handling of routine information in a single coordinated system that encompasses all uses of the same bit of data between its original receipt or generation by the organization and its final output in the form of documents or management reports.[1]

But he goes on to recognize that so far the integrated system is only conceptual and that time is needed because the task is ". . . fantastically complicated."[2] This complexity probably accounts for the failure for a "total system" to be achieved. As Kaufman writes:

> . . . So far the integrated company-wide, so-called "total systems" have been largely unsuccessful, although the concept is useful and provides a practical goal for many data processing programs. In fact, as the second computer decade begins, some authorities are sufficiently disenchanted to reject the "total system" approach outright as unsound, recommending instead concentration on more limited but probably more management consolidations.[3]

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[1]Robert N. Anthony, "New Frontiers in Defense Financial Management," Federal Accountant, XI, No. 4 (June, 1962), p. 17.

[2]Ibid.

[3]Felix Kaufman, "Data Systems That Cross Company Boundaries," Harvard Business Review (January-February, 1966), p. 141.

John Dearden, who has written so extensively on management and computers, is one of the disenchanted authorities. He writes:

> For at least four years, the term "total systems" has appeared with monotonous regularity in the literature about computers and systems. The term has been used so much by so many people to mean so many different things that . . . it has become completely meaningless.[1]

After examining the subject he concludes that "it will never be possible to have a perfectly integrated data processing system."[2] He feels that it is a dream concept and that an organization would be far ahead by concerning itself with automating those functions properly identifiable as worthy of automation.[3]

Despite the feelings on whether a total system can be developed, two concepts exist for how one should be achieved. Details of the system design principles involved are beyond the scope of this paper, therefore, only a broad conceptual view is provided.

One approach is the single information flow concept. In this approach all information is considered to be interdependent and a single piece of data is entered into the system only once. The results of the single information flow concept are that information is related to overall company requirements instead of individual users. Consequently, the system cuts across organizational and

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[1]John Dearden, "How to Organize Information Systems," Harvard Business Review (March-April, 1965), p. 65.

[2]Ibid.

[3]Ibid., p. 72.

functional lines. The other approach is called the total systems approach. It has evolved from integrating subsystems and placing them under a master control system. In this approach subsystems are responsive to needs of functional managers and both are responsive to the master control system.[1] A graphic comparison of these two approaches is shown in Figure 21.

The previous chapters have shown the systems developed by the Marine Corps to assist in executing its various functions. With many systems already functioning or on the drawing board the Marine Corps is also working toward a "total system."

The Integrated Information System

The Marine Corps Integrated Information System (I^2S) concept began in 1964.[2] By October, 1965, policies, procedures and a time schedule for its development were issued.[3] The I^2S system was to encompass all aspects of information systems currently in use or projected for use in the Marine Corps. Certain systems were to

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[1]For detailed discussion of these two concepts see A. F. Moravec, "Basic Concepts for Planning Advanced Electronic Data Processing Systems," Management Services (May-June, 1965), pp. 52-60 and A. F. Moravec, "Basic Concepts for Designing a Fundamental Information System," Management Services (July-August, 1965), pp. 37-45.

[2]Memorandum from the Deputy Chief of Staff (Plans and Programs) to the Commandant of the Marine Corps, enclosing Study No. 1-64, Subject: Totally Integrated Strategic Tactical and Management Information System, November 16, 1964.

[3]Headquarters, U. S. Marine Corps, Policies and Procedures for the Development and Implementation of the Marine Corps Integrated Information System, Headquarters Order 5200.4A, October 1, 1965.

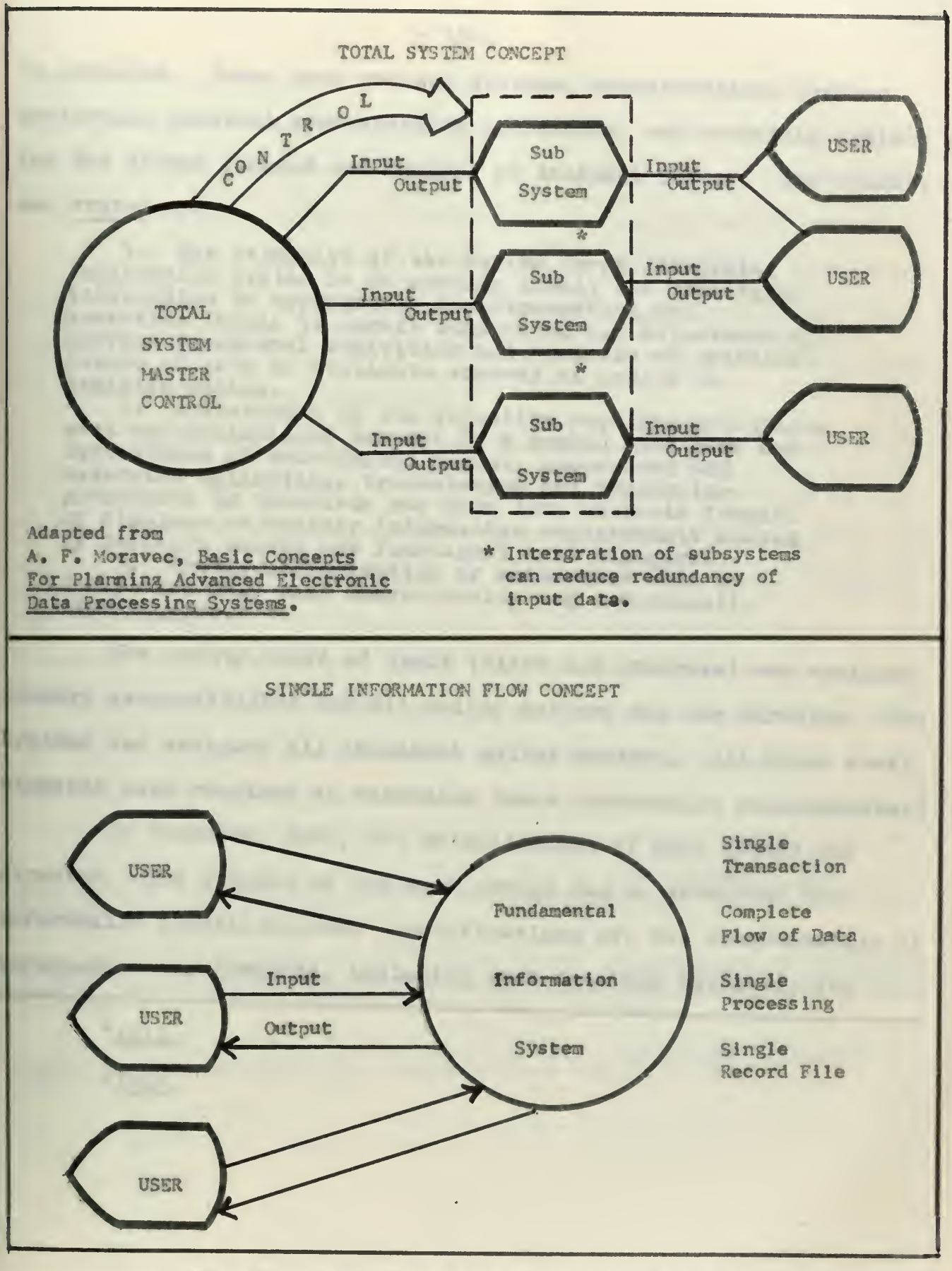
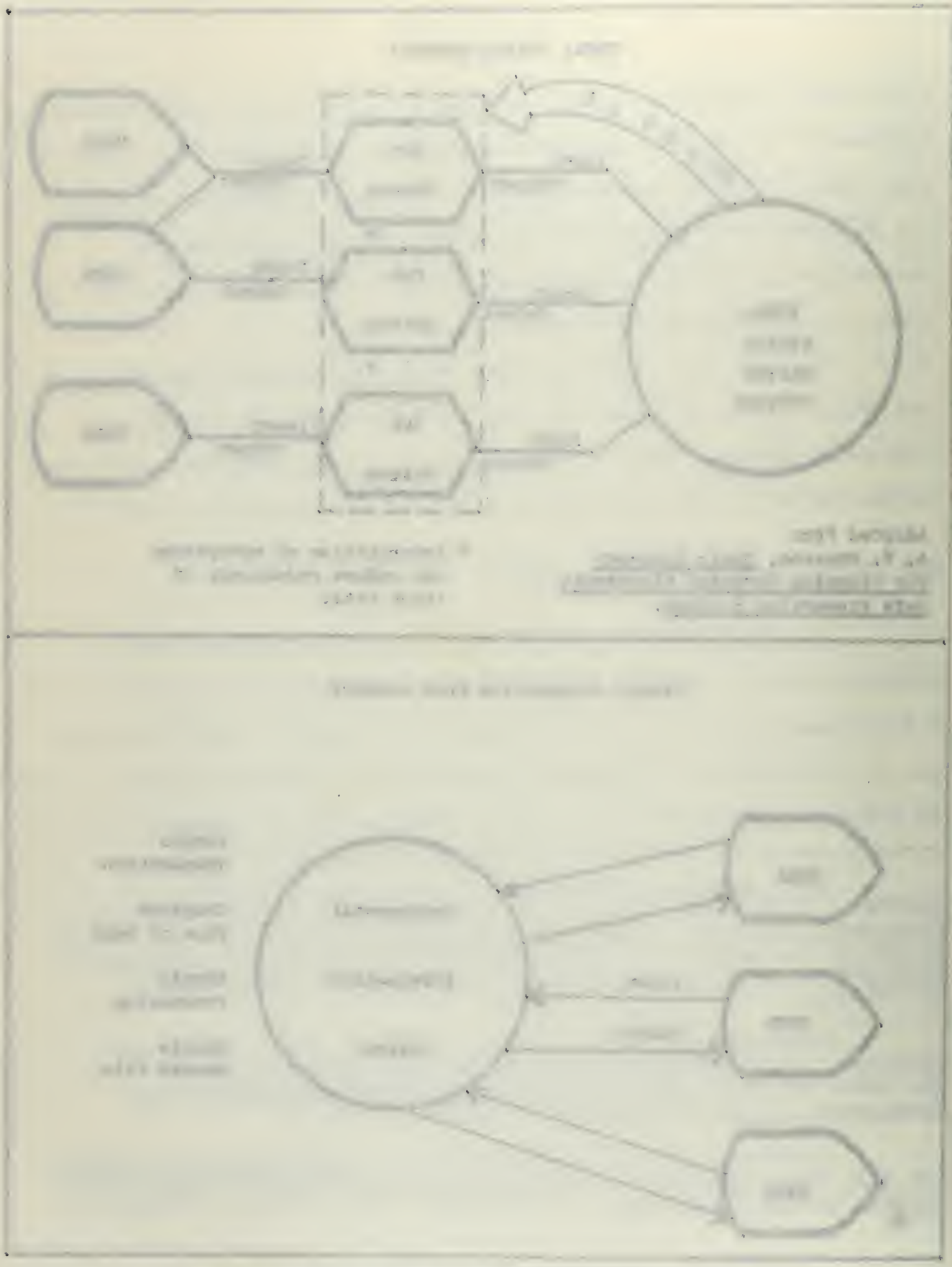


Fig. 21.--Comparison of the Total System Concept and the Single Information Flow Concept.



be excluded. These were weapons systems, communications systems performing terminal communication operations, and operating systems for the direct command and control of tactical forces. The concept was stated as:

> 1. The objective of the Marine Corps Integrated Information System is to provide timely and meaningful information to appropriate decision-making and operating levels to permit monitoring and adjustment of current functional activities and analysis of probable future effects of available courses of action in decision making.
> 2. Achievement of the objective requires establishment and centralized control of a common data base and development of coordinated manual, mechanized and automated collection, transmission and processing procedures to translate raw data into suitable formats or displays to satisfy information requirements stated by decision makers and functional area managers.
> 3. System mechanization or automation will be undertaken only when operationally and economically advantageous.[1]

The Deputy Chief of Staff (Plans and Programs) was assigned primary responsibility for all policy matters and the Director, Data Systems was assigned all technical policy matters. All other staff elements were required to determine their information requirements.[2]

In December, 1965, the establishment of work groups was directed. The purpose of the work groups was to establish the information specifications. Specifications are the documentation of information requirements, including what data are involved, its

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[1] Ibid.

[2] Ibid.

source, flow, frequency and where it reaches decision points. Thus the staff elements requiring information were directed to determine their information needs which would then be utilized by the Data Systems Division to determine the system design proposal.[1]

By May, 1966, modifications to the implementing directives were required due to the requirements being developed by the DOD Resources Management System. RMS was to affect almost every system in operation or being developed.[2]

By August, 1966, experience with the problems involved and the delay in the promulgation of comprehensive information on the DOD Resources Management System required revising the original time schedule and further definition of concepts.[3] The general staff was concerned lest the requirements of I^2S interfere with the functioning of the systems under their control.[4] This concern, however, was considered unfounded since it was envisioned that I^2S was to be designed to meet total information requirements by using the functional systems as a source of information.[5] Principal staff

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[1]Headquarters, U. S. Marine Corps, Establishment and Functioning of Information Systems Work Groups, Headquarters Order 5200.5, December 9, 1965.

[2]Headquarters, U. S. Marine Corps, Delineation of Responsibilities for Development of the Marine Corps Integrated Information System, Headquarters Order 5200.6, May 13, 1966.

[3]Headquarters, U. S. Marine Corps, Integrated Information System (I^2S); Guidance for, Headquarters Bulletin 5200, August 18, 1966.

[4]Ibid.

[5]Ibid.

officers would continue to manage their functional systems but they would contribute the necessary information to I^2S. Thus I^2S would be a master system requiring information from subsystems.

By October, 1966, headquarters directives codified the previous directives and provided clarification of the concept.[1] Concern with external pressure was also present. DOD and the Department of the Navy had expressed interest in the Marine Corps I^2S. The directive stated, in part, ". . . the Marine Corps must continue to expedite its own system in order not to be overtaken by events."[2]

Several salient features of the I^2S concept appeared in the codifying directive. They are:

> . . . To provide a <u>complete and comprehensive overview</u> of the Marine Corps, I^2S was established . . . . (Italics added.)
>
> I^2S <u>is</u> a composite, integrated, flexible combination of the information activities of the entire staff . . . because the staff supports the Commandant. . . .
>
> . . . Imperative . . . that I^2S provide timely and accurate information to answer the WHAT, WHEN, WHERE, WHY and HOW for the Commandant's decision-making policy. . . .
>
> Information required . . . will be supplied by functional area operating systems and integrated information systems of the field commands. . . .
>
> . . . will provide information on Marine Corps activities operating under conditions ranging from peace to general war. . . .
>
> . . . I^2S will provide information in an automated form to commanders at all echelons.[3]

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[1]Headquarters, U. S. Marine Corps, <u>Marine Corps Integrated Information System (I^2S)</u>, Headquarters Order 5200.8, October 6,1966.

[2]<u>Ibid</u>.

[3]<u>Ibid</u>.

Certain principles were specified as criteria in developing the I^2S. First, systems would be designed without regard for specific ADPE equipment. Secondly, the system would be supported by centralized files that would serve as a common data base for multiple use. Thirdly, systems would be designed to cross command and functional lines when best operational performance could be achieved and when required by mutual need. Fourth, early conversion of data into automated forms (source data automation) was required. Lastly, the system must be capable of using existing or planned telecommunications facilities.[1]

The tasks involved in developing I^2S and the schedule for accomplishing these tasks are shown in Figure 22. This time schedule provides a vivid example of the problems involved. Information needs must be determined by the staff for a system that is to become operational four years or more in the future.

Responsibility for information requirements remained with the functional work groups. A major change, however, is that the Director, Management Analysis Group instead of the Deputy Chief of Staff (Plans and Programs) was assigned responsibility for supervising and monitoring the development of I^2S.[2] Technical matters remained, as usual, with the Data Systems Division.[3]

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[1] Ibid.

[2] Ibid.

[3] Ibid.

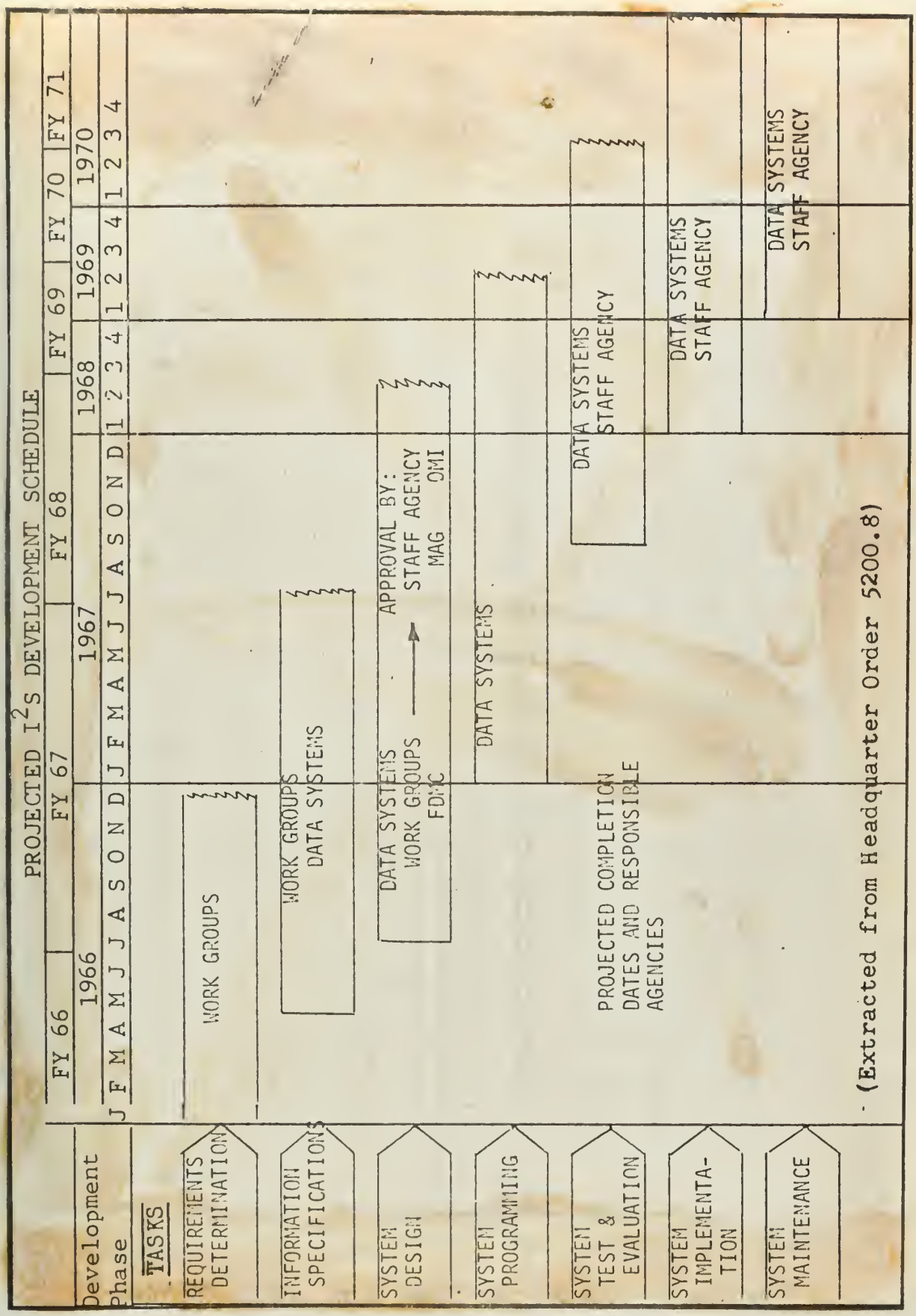

Fig. 22.--I^{2}S Development Schedule

Most significant, however, is that I^2S is broken into four subsystems. These are I^2S (Manpower), I^2S (Finance), I^2S (Operations), and I^2S (Logistics).[1] Figure 23 indicates the assignment of responsibility for these systems and the relationships to the other Marine Corps Systems. Thus what appears conceptually as a total system is, in fact, a collection of subsystems.

Experience of the work groups and staff in dealing with I^2S concept has resulted in more modification and understanding of the concept. On January 25, 1967, the Chief of Staff issued a memorandum which provided a graphic portrayal of I^2S which would be applicable to all command levels within the Marine Corps. Figure 24 is a copy of this diagram. The heart of the system is the communications system which permits exchange and transmission of data and information between the various elements. I^2S will have its own data storage and retrieval system to provide information peculiar to it that cannot be acquired rapidly from the other systems. The data storage and retrieval system is envisioned to be composed of more than one installation. This system will pass data to the data processing system, that will be automated where required. The data processing system will function automatically or on demand to produce displays of various types, or decisions based upon routine requirements.[2]

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[1] Ibid.

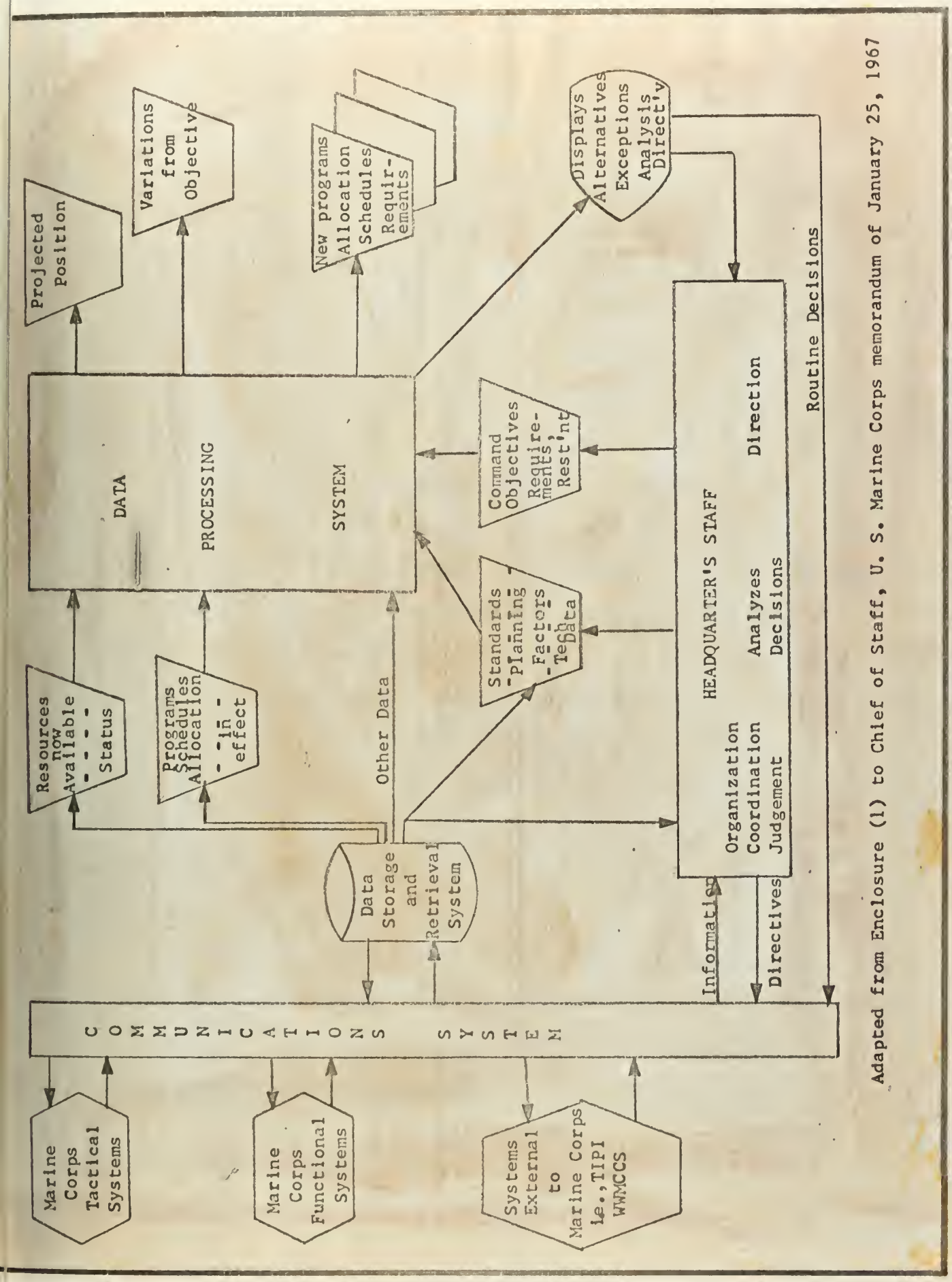
[2] Chief of Staff Memorandum to the Staff, Subject: The Marine Corps Integrated Information System (I^2S) Concept, January 25, 1967.

STAFF AGENCY REQUIREMENTS
BY
WORK GROUPS

	DC/S P&P	DC/S RD&S	DC/S AIR	G-1	G-2	G-3	G-4	FDMC	DIR PERS	QMG	DIV RES
I^2S (Mpr)				SR							*SR
PAS	0		0	0	0	0	0	0	X	0	0
T/O			0	X	0	0	0	0	0	0	0
PROJECTIONS	0	0	0	X	0	0	0		0	0	0
SNMMMS			X	0			0			0	
I^2S (Fin)								SR			
BUDGET	0	0	0	0	0	0	0	X	0	0	0
PROGRAM	X	0	0	0	0	0	0	0	0	0	0
JUMPS				0				X	0		
RMS	0		0	0		0	0	X	0	0	0
BONDS/ALLOT								X	0		
RET PAY								X	0		
RES PAY								X	0		
I^2S (Log)							SR				
MUMMS				0			0	0		X	
TRUMP			0	0			X	0	0	0	
SASSY			0	0			0	0		X	
SNMMMS			X	0			0			0	
I^2S (Opns)						SR					
WWMCCS			0	0	0	X	0		0	0	
MTACCS		0	0	0	0	X	0	0		0	
MAGIS		0	0		X	0	0				
MARES			0	0		X	0	0	0	0	
MTDS		X	0			0	0	0	0	0	

*SR REPMIS
SR Overall coordination responsibility for information requirements.
X Primary Functional Area responsibility
0 Provides requested information requirements
(Extracted from Headquarter Order 5200.8)

Fig. 23.--Staff Agency Requirements by Work Groups



Adapted from Enclosure (1) to Chief of Staff, U. S. Marine Corps memorandum of January 25, 1967

Fig. 24.--I^2S Block Diagram

Summary

The Marine Corps is in the early stages of developing a system for managing its systems. To classify it as a total system is logical, but problems have already appeared that question the logic. I^2S is based upon the assumption that needed information can be drawn from the other Marine Corps systems. These systems overlap each other and duplication exists. The supply systems have the capability of providing detailed financial data that can duplicate data in the financial management systems. The Resources Management System requires costing for military personnel at the operating level. This is really only a modification of information in the manpower systems. The readiness reporting system requires information from the manpower and supply systems. The interaction process is almost infinite. Figure 25 demonstrates the interaction involved that must be considered in intergrating the Marine Corps systems and I^2S. The ramifications of the interaction or interface problem are obvious and appreciation of the complexity of the process is enhanced when it is remembered that the system(s) must function in peace or war.

The developmental work on the I^2S subsystems should identify the areas of duplication. Just as systems were developed to handle specific functional areas the I^2S subsystems can provide a purifying action on the systems they absorb.

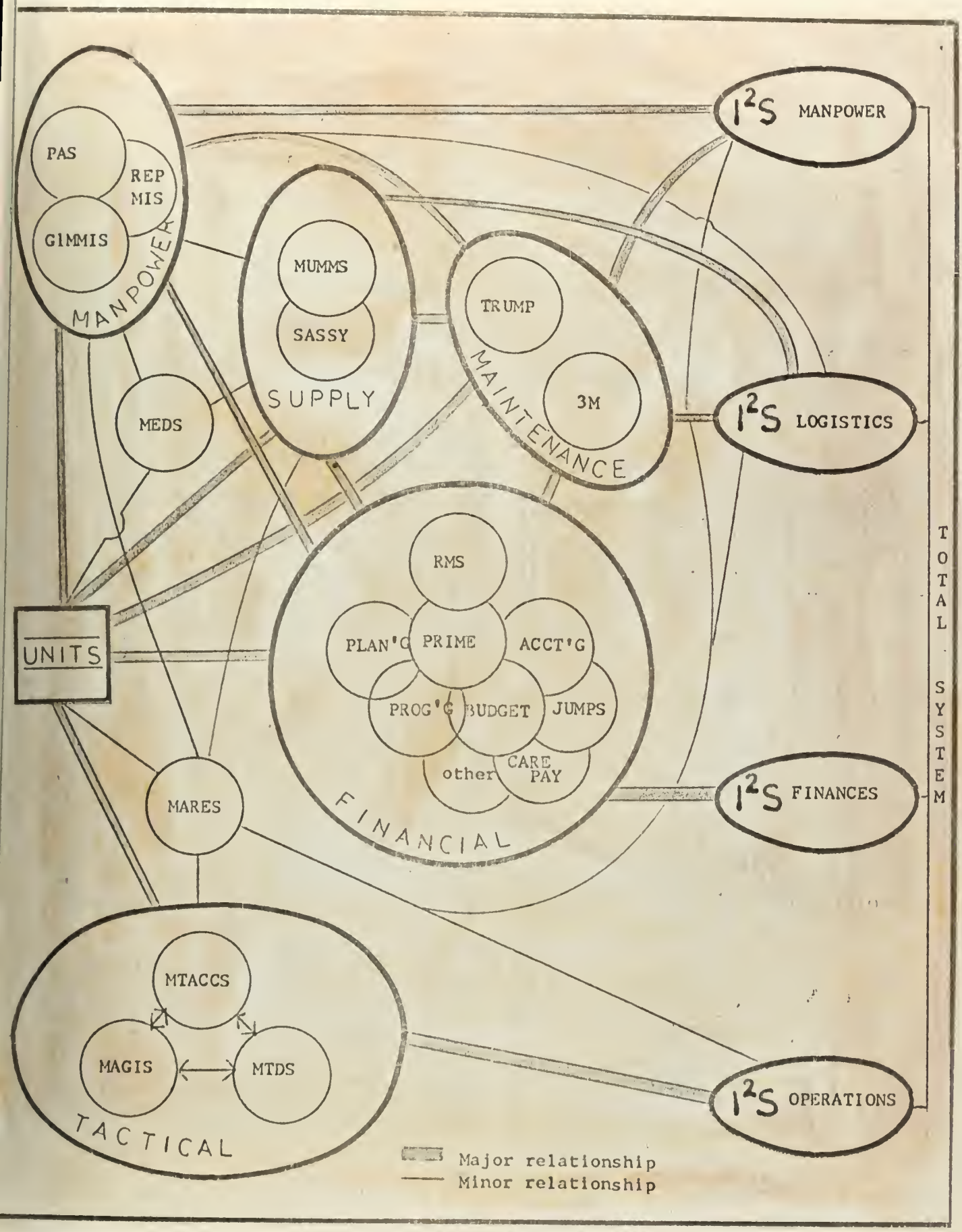


Fig. 25.--Marine Corps Systems Interaction

While the I^2S subsystems and the staff satisfy the definition of a system, so will the other systems and the staff. A logical extension of the evolutionary process of Marine Corps systems development will be to develop a system to absorb the I^2S subsystems. When this occurs a truly totally integrated management system for the exercise of command within the Marine Corps will have been achieved. Until then the present concept provides another step forward.

The evolutionary process focuses attention on the organization of the Marine Corps and in particular, the headquarters staff. Perhaps a task of higher order is to design an organizational system capable of coping with the impact of automated systems and one which will be adaptable to its changing environment.

CHAPTER XI

IMPACT OF SYSTEMS ON ORGANIZATION

One of the biggest concerns in both business and government are computers and their impact on management information and organization. Allied to this is the question of who will manage information systems. Clewlow addresses this from a national viewpoint by writing, ". . . an early goal in effective management of Government computers should be the development of a management information system about and for computers."[1] Gilbert Burck,[2] Leavitt and Whistler,[3] John Dearden[4] and a host of others have examined these problems. Exact answers have not been provided but good questions have been raised.

Information, and particularly management information, has also been treated in some depth within the literature.[5]

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[1]Carl W. Clewlow, "Data Processing in the Federal Government," The Federal Accountant, XIV, No. 4 (Summer, 1965), p. 59.

[2]Burck, op. cit., pp. 125-128.

[3]Leavitt and Whistler, op. cit., pp. 41-45.

[4]Dearden, op. cit., pp. 65-73.

[5]A special reprint series of nine articles on management information and a series on managing computers is offered by Reprint Service, Harvard Business Review, Soldiers Field, Boston, Massachusetts.

An Air Force general warns:

> Information including management information is growing by the microsecond and even the nanosecond. We cannot turn off the flow. We, therefore, better learn to control it--and we are already running late.[1]

The same general explained his method of coping with the problem:

> In my own headquarters, the Director of Management Analysis functions as the Management Information Manager. As a derivative of his activity in this role, he and his staff also: act as an educator in management techniques; serve as a helper and consultant in analyses conducted within other staff agencies; and above all operate as a catalyst for speeding up within the staff the process of analytical improvement.[2]

Porter and Mulvihill also suggest creation of a new information systems group ". . . to be formally structured and for one person to have specific responsibility for information systems."[3] They also propose that the director of this group furnish information to management for the operation of the business and that management decisions and policies would also flow to the organization through this department.[4]

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[1]General Howell M. Estes, USAF, "Will Managers be Overwhelmed by the Information Explosion?," Armed Forces Management, XIII, No. 3 (December, 1966), pp. 75-84.

[2]Ibid.

[3]W. Thomas Porter, Jr. and Dennis E. Mulvihill, "Organization for Effective Information Flow," Management Services (November-December, 1965), p. 17.

[4]Ibid.

Fisch in exploring the span of management problem also recognized this problem and recommended:

> There must be someone in tomorrow's complex organization who is in charge of all aspects of information generating, processing, and dissemination. It must be his responsibility to determine how management's information needs can best be met. Furthermore, he must have the intellectual capacity to know what types of analysis performed on various data will produce information of value to the company.[1]

Thurston takes the opposing viewpoint that control of information systems should be with the operating managers. He bases his recommendation on a detailed study of thirty-two systems projects. He found that where ". . . operating men who, being motivated to do the job, did take control, the record of successful completion of projects was better than when staff men directed operations."[2]

John Dearden recognizes the need of operating managers to become involved but he also recommends centralization of the systems effort. He stresses that it must not be under control of the financial staff or the data processing specialists as it is in so many organizations.[3]

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[1]Gerald G. Fisch, "Stretching the Span of Management," Harvard Business Review (September-October, 1963), p. 13.

[2]Phillip H. Thurston, "Who Should Control Information Systems," Harvard Business Review (November-December, 1962), p. 138.

[3]Dearden, op. cit., pp. 65-73.

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The most significant impact of systems is upon people. "Soldiers, no less than lawyers, priests or doctors, are human; and the great institutions over which they all preside are organic rather than mechanical growths. . . ."[1] Officers have developed a reasonable degree of faith in the various systems dealing with personnel, supply or any business type application. It is still common, however, to hear such comments as "the machine made a mistake so our data is incorrect," or "it gives me a ten inch stack of paper but not the information I want." These comments and others like them will only be solved through an education process.

Hanes and Gebhard, while experimenting with computers on tactical problems, found that while professional naval officers accepted computer aid in principle, that, in practice, acceptance of tactical action recommendations varied from zero to 100 percent.[2] Konvalinka and Trentin partially explain the cause of the aforementioned response:

> The winning general makes his decisions on a timely basis, using the best information available to him at the time and important intangible elements like experience, judgment, nerve and an instinctive feel for people and situations.[3]

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[1]Walter Millis, Arms and Men (New York: G. P. Putnam's Sons, 1956), p. 325.

[2]R. M. Hanes and J. W. Gebhard, "The Computer's Role in Command Decision," Naval Institute Proceedings (September, 1966), pp. 61-68.

[3]J. W. Konvalinka and H. G. Trentin, "Management Information Systems," Management Services (September-October, 1965), p. 27.

If the Marine Corps goes to the expense and effort to place computer aided systems on the battlefield then it must insure that the computer is programmed to produce results acceptable to its field commanders. It must also train its personnel to understand the systems so that they can properly use them. Otherwise, the automated system is an unnecessary expense or could even become a hindrance.

The effects are all encompassing. Leavitt summarizes:

> Organizations can be thought of as lively sets of interrelated systems designed to perform complicated tasks. We can try to manipulate at least three dimensions of those systems in order to get the performance of tasks changed or improved. We can manipulate the organization structure . . . we can manipulate the tools and techniques used in the system. . . . We can enter from the people side, to change bodies, or attitudes, or inter-personal relation. . . . But we must never for a moment forget that when we tamper with any one of these three variables, structure or technology or people, we are likely to cause significant effects on the others as well as on the task. (Italics added.)[1]

It is in this pattern that the impact of systems will be examined. While the major impact is on people, it is upon them in three environments: the operating forces, the headquarters staff, and top management.[2]

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[1]Harold J. Leavitt, Managerial Psychology (2d ed. Chicago: The University of Chicago Press, 1964), p. 325.

[2]The colonels and generals who are principal staff officers at Headquarters, U. S. Marine Corps.

The Operating Forces

Every major system that has been discussed will have an effect on the operating forces of the Marine Corps. The more obvious and major effects of each system were shown in the discussion about the system. There are other effects, however, that are more subtle and possibly more difficult to cope with.

The mission of the Marine Corps is not likely to change in the foreseeable future. Marines will still be expected to close with and destroy the enemy. Consequently, the organization of combat units will be based upon anticipated tactical requirements. The supporting elements of combat units, however, will experience changes in the skill levels of personnel, more complex equipment to maintain, and, hopefully, a reduction in paperwork. The work in logistical support should be simplified by such systems as MURMS, SASSY, and MLDS. More emphasis can be placed on solving people problems instead of the clerical aspects of personnel management.

At the same time, commanders at all echelons will have to adapt to higher headquarters knowing facets of their operations, in both combat and non-combat environments, as soon as they do. Higher headquarters will have to cope with knowing sufficient detail information to permit them to control subordinates' operations. Possession of this information could result in over-control which

could create undesired human responses,[1] even in a military environment.

McGregor warns that the new detailed information must be used at the appropriate level, not for closer supervision. He writes:

> With respect to data and reports compiled by staff groups, the principle of self-control requires that they be provided to each member of management for controlling his own, not his subordinates' job. . . . Every manager is entitled to all the detailed data he wishes for purposes of self-control. If, however, the data are broken down in a fashion which reveals the day-to-day performance of individual subordinates, they are no longer data for self-control. His use of such information vitiates the idea of delegation completely. (The same thing is true, of course, if he assigns to staff the responsibility of "controlling" his subordinates by this means). . . .
>
> . . . . . .
>
> If such summary data indicates to the manager that something is wrong within the organizational unit for which he is responsible, he will turn not to staff, but to his subordinates for help in analyzing the problem and correcting it. He will not assign staff "policemen" the task of locating the "culprit." If his subordinates have data for controlling their own jobs, the likelihood is that they will already have spotted and either corrected the difficulty themselves or sought help in doing so.[2]

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[1]For a detailed discussion of the effects of elevating decision making through information technology see Joseph D. Cooper, The Art of Decision Making (Garden City, N. Y.: Doubleday & Co., 1961), p. 95 and Rensis Likert, New Patterns of Management (New York: McGraw-Hill Book Co., 1961), p. 210, and James B. Bower and J. Bruce Sefert, "Human Factors in Systems Design," Management Services (November-December, 1965), pp. 39-50.

[2]Douglas McGregor, The Human Side of Enterprise (New York: McGraw-Hill Book Co., 1960), p. 161.

All officers will have to become knowledgeable in the area of advanced systems and with the techniques associated with them. The Marine Corps has recognized this by placing operations analysts and associated specialists on the staffs of the Fleet Marine Force commanders.[1] A special syllabus is being developed for officers' advanced schools and a policy of providing general officers with advanced schooling in data processing management has been instituted.[2]

The addition of increasingly complex equipment will, as always, have effects on the employment of combat units, just as modern communications have permitted greater dispersal of units and more centralized control of combat operations. The danger exists that commanders may become chained to their computers. Implications of this are far-reaching and even though planners give thought to it, major attention is needed in this area. Colonel John F. McCarthy, Jr., USAF (Retired), an associate professor and instructor in data processing systems with extensive military experience, warns that the military must be alert to the need for alternate non-automated systems for if ". . . someone pulls the plug [electrical] we're out of business."[3] This may seem an obvious

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[1]Interview with Major B. L. Avera, USMC, Distribution Officer, Personnel Department, Headquarters, U. S. Marine Corps, March 3, 1967.

[2]Interview with Brigadier General L. Metzer, USMC, Assistant Deputy Chief of Staff (Programs), Headquarters U. S. Marine Corps, November 1, 1966.

[3]Lecture by Associate Professor J. F. McCarthy, Jr. to the class of the Navy Graduate Financial Management Program, March 9, 1967.

point but history is full of examples of military commanders having a system or single piece of equipment overly influence their strategic and tactical decisions. The Marine Corps tactical systems, from all indications, have been designed to ensure alternate systems but the emphasis must be on the training of commanders.

Top Management

In 1926, Mary P. Follet prophesied,

> . . Management is becoming more and more specialized; the policies and methods of a department rest on that department's special body of knowledge, and there is a tendency for the responsibility to be borne by those with that special body of knowledge rather than by a man at the top because of his official position.[1]

With the development of systems and the assignment of principal staff officers as functional area managers, her prophesy may be accurate forty years after it was made. Granted, field commanders are still directly responsible to the Commandant. More often than not, however, they are obeying the orders of the headquarters staff.

The previous statement would cause considerable argument that the staff has no command authority but, as Reis notes:

> All orders, even those involving minute details to lower echelons, are given in the name of the commander. . . . At the same time . . . the fiction that the staff officer does not command does not alter the fact that he not only plans and issues orders, but he also directs the

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[1]Mary P. Follet, "The Illusion of Final Authority," a paper presented before the Taylor Society in New York, December 10, 1926.

> details of execution, insofar as the commander permits. . . . In order to preserve unity of command and hierarchical configuration, subordinates must report to only one superior and all lines of authority must converge on one man at the top. But at the same time, staff officers are to have real responsibility for their assigned functional areas.[1]

The line versus staff debate will not be discussed, but the authority aspects of the staff just developed draw attention to another concept, that is, the concept of management by committee or the team concept. Teamwork, coordination, cooperation and other such terms are all considered necessary for smooth staff functioning. This is not what is meant by the team concept. The Deputy Chiefs of Staff provide an example. Their responsibilities are stated in terms of assisting the Chief of Staff and in terms of coordinating or supervising various activities; but they are not responsible for a functional area. They, in essence, help the Chief of Staff cope with his present large span of control. Matters relating to their areas of interest pass through their offices for perusal and comment prior to reaching the Chief of Staff; or else, he sends them the matter for comment. Through this action they can function as a super-staff. If disagreement occurs, the staff officer involved can appeal to the Chief of Staff, but this in no way negates the power of the position held by the deputies.[2]

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[1]John C. Reis, The Management of Defense (Baltimore: The Johns Hopkins Press, 1964), pp. 22-23, 159.

[2]For discussion of the line and staff conflict see W. M. Bledsoe, "Line and Staff Conflict in Organization." Unpublished master's thesis, School of Government, Business and International Affairs, The George Washington University, 1965.

Similar relationships could be developed but they too would fit Daniel's "Team at the Top" concept[1] and validate Follet's prophesy. Thus as operations become more complex and as systems cut through functional area barriers more and more talent will be required to effectively reach decisions. This, in turn, will cause realignment of the staff structure.

The Headquarters Staff

As stated in Chapter II, the theory behind the organization of the staff of Headquarters, U. S. Marine Corps is at best debatable. Interviews with staff officers while doing research for this paper produced a general observation that the staff is in an unknown state of change. The rate of change, however, is slow and deliberate. Colonel Shuman advances an explanation for the slowness. He writes:

> Most important, within the Marine Corps the new system of DOD management by programs is viewed as any other scheme or method of administration and is treated accordingly. Thus, with minor adjustment, participation becomes a product of the existing staff, negating a possibly erroneous organizational realignment to accommodate the new system.[2]

Moving with caution offers an explanation for retention of the present staff organization. It does not alleviate the fact,

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[1] D. Ronald Daniel, "Team at the Top," Harvard Business Review, (March-April, 1965), pp. 74-82.

[2] Colonel Perry L. Shuman, USMC, "Military Management: A Realistic View," Marine Corps Gazette, June, 1964, p. 21.

however, that numerous studies have recognized the existence of duplication of effort, overlapping responsibilities, and an inordinate span of control for the Chief of Staff.[1] The most obvious areas of overlap and duplication highlighted by these studies were the G-1 Division and the Personnel Department, and the G-4 Division and the Supply Department. These observations are supported by analysis of the Marine Corps systems. In addition, other areas of almost equal importance appear.

The focus of the several approaches taken by the Marine Corps in developing systems has been on the use of work groups under functional managers, or the task force approach. In every case the expertise of the Data Systems Division has been added to the work groups. It has also been necessary to assign overall systems responsibility to the Director, Management Analysis Group, yet the functional managers remain responsible for their functional systems.

In addition to responsibilities assigned the staff within the headquarters, a special unit has been created to deal with advanced procedures and techniques of using automatic data processing equipment.

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[1]For detailed discussion of this point see material referenced in footnote 1, page 12; "Report of the Headquarters Marine Corps Reorganization Board (Pepper Board) dated August, 1961"; "Supply Department Study 3-62"; "Report of Committee to Develop Supply System Organizational Structure"; and "Report of Recommended Organizational Structure for Deputy Chief of Staff (Command Systems) (Youngdale Study)"; dated April 14, 1966.

[illegible]

[illegible]

The Systems Management Analysis, Research and Test (SMART) Unit was established January 1, 1967.[1] This unit is located at the Marine Corps Supply Center, Albany, Georgia but under the technical direction and control of the Data Systems Director.

The primary responsibility of the SMART Unit is to accomplish systems management studies for the Inventory Control Point Subsystem and Remote Storage Activities of the Marine Corps Unified Materiel Management System. Because of the ADPE capability available at Albany for the performance of the primary responsibility, a secondary responsibility was assigned for the conduct of systems management studies related to any functional area where business data automation methods might be applied.[2]

The organization established for the SMART Unit is small.[3] It provides for a small group of data processing specialists to perform systems analysis functions. If a Marine Corps activity requests systems management analysis services for its functional area it must ". . . furnish functional systems data analysts to define the problem."[4]

Although broad responsibilities are assigned the unit, a broader more encompassing mission is assigned as follows:

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[1]Headquarters, U. S. Marine Corps, Designation of Systems Management Analysis, Research, and Test (SMART) Unit, Headquarters Order 5430.9, August 8, 1966.

[2]Ibid.

[3]Three officers and eight noncommissioned officers.

[4]Hq.U. S. Marine Corps, Designation of Systems Management . . . (SMART) Unit, op. cit.

Mission. As directed or approved by the Commandant of the Marine Corps, this office will conduct centralized Marine Corps applied research by developing and utilizing advanced mathematic, operations, analytical, and programming techniques in the solution and simulation testing of solutions to management problems. It shall evaluate current procedures and develop improved techniques to provide cost reduction and increased mission effectiveness.[1]

While broad responsibilities and a general mission were specified, the implementing directive delineated specific functions as follows:

Functions. Through various model and gaming projects, the SMARF Unit will conduct the following:

a. Scientific definition of logistics and supply management problems deriving from the installation and implementation of the Marine Corps Unified Materiel Management System.

b. Perform secondary responsibilities for scientific definition of management problems deriving from the installation and implementation of Marine Corps Systems in other functional areas.

c. Performance of studies of the projected versus the actual system performance, the extent to which system specifications are being met or exceeded, and the degree to which the specifications accurately reflect the observed system requirements.

d. Validation of programming routines against initial estimates of running time required to identify and describe management factors and considerations operative in the system which were not known or understood.

e. Testing of management hypotheses by the development of mathematical and program models for computer simulation.

f. Identification of correlations in various aspects of system operation and behavior which might offer potential short-cuts in the management process.

g. Preparation and forwarding to Headquarters, Marine Corps of periodic research and test reports describing the problems under investigation, the current status of development work, and what solutions may be reported or projected.[2]

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[1] Ibid.

[2] Ibid.

The functions assigned the SMART Unit are very similar to those being performed by the Marine Corps Operations Analysis Group in developing the Marine Corps Cost Model.[1] They are also closely related to the overall systems responsibility of the Director, Management Analysis Group.

Recognition of the need for an entity for the management of information systems resulted in the establishment of the Management Analysis Group, but a much larger group was recommended.[2] Five alternatives, as shown in Figure 26, were considered. The creation of the office of the Deputy Chief of Staff (Command Systems) was recommended. This new office would combine the office of the Deputy Chief of Staff (Administration), the Data Systems Division, the Management Engineering Branch of the Administrative Division, the Marine Corps Command Center, and elements of the G-3 and G-4 divisions. The organization that would have resulted from this recommendation is shown in Figure 27.

Examination of the functions of the staff elements involved support the recommendation. (See Appendix III). When the inter-association of information requirements for I^2S are taken into account, the need for a comprehensive systems management office appears almost mandatory.

A centralized group, charged with overall systems development duties, is in a position to recognize relationships that might

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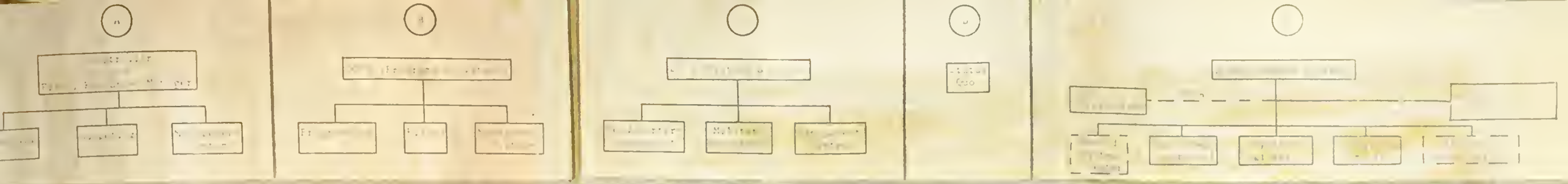
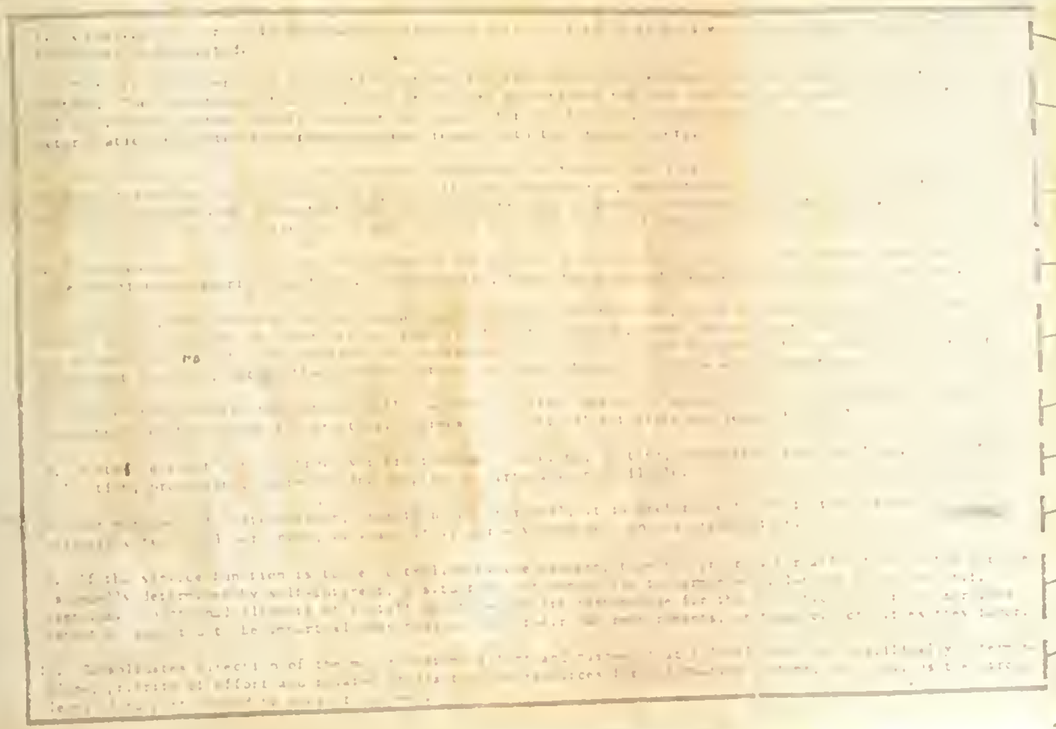
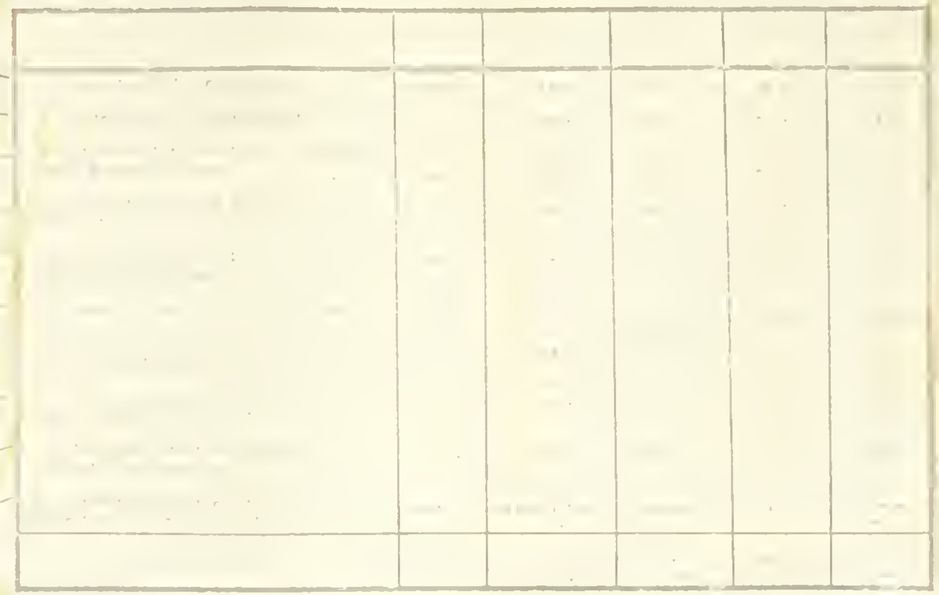
[1] Supra, p.

[2] ". . . (Youngdale Study)," op. cit.







Extracted from Report of Recommended Organizational Structure for Deputy Chief of Staff (Command Systems) dated April 14, 1966

Fig. 26.--Alternatives Considered by Headquarters, U. S. Marine Corps for Centralized Systems Office

Extracted from Report of Recommended Organizational Structure for Deputy Chief of Staff (Command Systems) dated April 14, 1966

escape recognition by the existing diversified staff elements which are now involved. Of equal importance would be more effective utilization of scarce talent. The functional managers would still determine their information requirements and evaluate the performance of the systems. Each subsystem would still remain responsive to the functional managers. On the other hand, a centralized group is more likely to be able to develop a truly total system because they have a broader view of the organization.

The systems also provide an indication of other possible structural changes within the staff.

Figure 25 shows the assignment of responsibilities for the I^2S subsystems and the other Marine Corps systems. The reader will note that four staff officers are responsible for the overall coordination of information requirements of the I^2S subsystems. These are: Assistant Chief of Staff, G-1, Fiscal Director, Assistant Chief of Staff G-4, and Assistant Chief of Staff G-3. Overlap also shows in the assignments of responsibilities for functional area systems.

Assuming that the grouping of functions under the I^2S subsystems is logical for the information flow and interface of the systems, then the question is raised as to that also being a logical grouping for staff structure.

If a centralized management systems group was adopted, four of the twenty-four staff elements presently reporting to the Chief

of Staff would be reduced to one. Likewise, if the directorate concept and the I^2S groupings were used as a basis for organization, further consolidation could be effected. The staff could be consolidated by combining the G-1 Division and Personnel into a Manpower Directorate; the G-4 Division and Supply Department into an Installations and Logistics Directorate; the G-2 and G-3 divisions into an Operations Directorate; and the programming duties of the Deputy Chief of Staff (Plans and Programs) could be given to the Fiscal Director to form a Directorate of Finance.

Other consolidations also appear possible. The Director of Reserve could be elevated to the status of a Deputy Chief of Staff and most of the functions of the Division of Reserve passed to appropriate directorates. Centralization of reserve and regular pay and personnel records at Kansas City are already planned and both reserve and regular recruiting have long been combined responsibilities of the directors of Marine Corps Districts. In the same light, many of the functions of the Deputy Chief of Staff (Air) could be transferred to the directorates. Combination of air and ground functions at the Fleet Marine Force level has proved effective. Additionally, the Policy Analysis Division could be placed within the office of the Deputy Chief of Staff (Plans).

Another area of duplication that will be affected by systems is that of files maintenance. Currently, within the Headquarters, there is a decentralized policy on maintaining files. Each section maintains files of information pertaining to its primary area of

cognizance. The Central Files Section, however, is charged with maintaining the unclassified subject correspondence files, exercising technical control over the decentralized files, and maintaining the current file of effective Department of Defense and Navy directives.[1] The Classified Files Section maintains the classified files.[2] The Directive Control Section of the Publication and Printing Branch serves as the control point for incoming directives, administers the Marine Corps Directives System, maintains a current file of effective Department of Defense and Navy directives, Marine Corps directives, issues checklists of effective directives, and routes incoming directives and related material to cognizant staff agencies.[3] As one officer states, "I spend most of my time researching the background data on a subject." If the matter involves an historical subject the Historical Branch of the G-3 Division becomes involved.[4] Development of systems such as I^2S and a centralized management information agency could lead to centralization of the files. Without belaboring the obvious it is apparent that if there was one location, be it a staff section or a computer data bank, that greater efficiency could be obtained. In addition, the computer could be used to advantage in cross referencing subjects.

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[1]Hq. USMC, Headquarters Manual, op. cit., p. 10-22.

[2]Ibid., p. 10-23.

[3]Ibid., p. 10-16.

[4]Ibid., p. 4-15.

Reorganization of the staff using these combinations would produce a structure as shown in Figure 28. The reader will note that the span of control of the Chief of Staff has been reduced from twenty-four to eighteen. Span of control is not a law unto itself but the simplification of the organization is obvious.

The purpose of this study is not to develop a new structure for Headquarters U. S. Marine Corps, but the impact of systems, especially I^2S, indicate that one is necessary. Some of the consolidations presented are drastically new for they have all been recommended at one time or another but have lost to more powerful vested interests. Nonetheless, the existing systems are pressing toward a reorganization and I^2S, once established, may well demand it.

Fig. 28.--Proposed Headquarters Organization

CHAPTER XII

SUMMARY AND CONCLUSIONS

Summary

As a military organization the Marine Corps is faced with the same basic problems of any organization. It must obtain the necessary resources of men, money and material and use them to accomplish the goals of the organization. One difference is that the Marine Corps has well defined, specific missions and must operate within the framework of the assigned missions and legal constraints. Business corporations function within limits of their corporate charters which generally permit far greater latitude on the part of management. Nonetheless, the processes of management must be performed by both.

In performing its command and management functions, the Marine Corps has used many systems. They have evolved from purely manual procedures and methods to today's highly complex systems using modern communications and high speed computers.

Emphasis has been placed on existing organizational patterns. The effort has been to ensure that men, not machines,

make the decisions. Full recognition is given, however, to the contribution of automated systems for providing more useful information to the decision maker.

The Marine Corps systems approach is, in large part, inspired by financial considerations. Increased emphasis on effective and efficient utilization of money originally focused attention on the need for the application of sound management principles and techniques. Decentralization of financial management responsibilities to field commanders contributed to the process. They were held accountable for managing their resources in the most efficient way. The manner in which decentralization has occurred has helped Marines develop a sense of financial responsibility.

Each system exists to assist in managing specific functions. The planning-programming-budgeting system as it will be modified by the DOD Resources Management System represents an externally directed effort to develop the primary management system on a financial basis. The impact of this on a military organization is difficult to assess. A business exists to make a profit and its financial statements provide a measure of its success or failure. For the military the ultimate "pay-off" is success in battle and the nuclear age may provide only one chance for success. Barring a total war, however, there are economic considerations that make it mandatory that effective military strength be accomplished economically. For this reason the financial management system will remain significantly important.

When automatic data processing equipment entered the scene, the initial application was in the area of personnel, supply and accounting, just as in the business community. The equipment, however, has not become the property of a particular staff element but has remained an independent, service oriented function.

Besides the need for continued economy of operation and the advantages accruing from automated systems there is the need for improved means of control on the battle field. Thus, the impetus has been a two-pronged attack to achieve greater effectiveness on the battle field through increased combat readiness achieved by the most effective and economical means possible. Accordingly, the supply systems, discussed in Chapter IV, were developed to fill an internal need for improving supply acquisition and distribution to combat units. They were also developed to help the Marine Corps meet requirements placed upon it by the Department of Defense to reduce operating expenses.

The systems for personnel and pay matters were developed for several reasons. First, the most important asset in the Marine Corps is Marines. As the Corps has grown in size and complexity so has the need for more effective management of people. Not only must more numbers of people be handled, but complexity has created greater emphasis on recruiting, training and placing the right person in the proper job. Secondly, the largest percentage of Marine Corps funds is spent for people. Inefficient management of people is inefficient management of dollars. In order to compete for appropriations, the

Corps has had to show that it makes good use of its resources. The uniform pay system has resulted from external pressures. Whether an internal need exists is immaterial, but it would appear that as the Corps moves closer to implementation of an automated personnel system, its pay system would have become more centralized and in order to keep pace, more fully automated.

Maintenance involves men, money, supplies and equipment. In the aviation field the Marine Corps functions under Navy policies and procedures. In this sense, the 3M System was externally directed. Project TRUMP was a result of an internal need to improve ground equipment maintenance procedures. Experience with 3M and other systems has shown what could be accomplished. The dual pressure of improved combat effectiveness and efficient use of resources are present. TRUMP, though still in early design stages, raises many questions. MUMMS and SASSY have been designed to cope with existing and anticipated problems. Their costs of implementation are not known in detail, but should TRUMP studies reveal needs for large scale modification to the supply system, a hard decision will have to be made as to which system will prevail. TRUMP is also involved in personnel problems and training problems. TRUMP will also have to conform to these systems, which are further developed, or else compromise is again necessary.

Development of the tactical systems is geared directly to success on the battle field. The MTDS system has been developed in close coordination between the Navy, the Deputy Chief of Staff (Research, Development and Studies), the Deputy Chief of Staff (Air) and civilian contractors. The MTACCS system has been under the supervision of the G-3 with the exploratory studies by private concerns. MAGIS is under the supervision of the G-2, but other agencies within the Department of Defense are also involved. In each case, however, other Marine staff elements are involved. Also, there are personnel problems that must be dealt with. Once equipment requirements are determined, the G-4 and Quartermaster General become involved in obtaining it and the Fiscal Director becomes involved in obtaining the necessary funds. The point is that the systems development effort crosses all functional boundaries.

The systems developed for various functional areas provide management information but other systems exist that also produce useful information. Each provides a means of controlling operations. Each carries with it the concept of military command or national responsibility and authority. Each provides for some form of direction. Each provides an incremental contribution to the overall management effort. Each requires the input of data on men, money and material and the objectives sought. By themselves, however, they do not offer the analytical and projective capabilities necessary for the Commandant's timely decision making. Nor do they

assure the timely flow of required information between each other.

The use of the task force approach has helped the Marine Corps systems effort to effectively cross functional boundaries. It has also permitted the deep involvement of the functional managers in the development of automated system. If, however, staff had been organized as suggested in Chapter XI, with a centralized systems office, many problems might have been avoided. One of the major contributions of such a staff organization would be that it more nearly matches the logical flow of information thereby reducing duplication of effort.

Staff helps coordinate the various systems, thus providing the information needed by the Commandant in executing his responsibilities. Many decisions are made by the staff and transmitted in the name of the Commandant. The development of the I^2S system and its subsystems, with the requirement of a central staff element to administer them, is a key evolutionary step toward an overall, integrated system. Besides changes in organization, I^2S also points to changes in the decision making process. More decisions will be programmed decisions based upon compromises reached by the top management group. The need for Marine officers to become not only knowledgeable in the functions of management but also in the management aspects of automated data processing systems is obvious.

In Conclusion

Many systems exist in the Marine Corps and have since its beginning. The systems presented in this study represent a significant effort towards harnessing the power of modern communications and data processing equipment to improve the effectiveness and efficiency of the Marine Corps. The two major questions to be answered by this study are why the Marine Corps has developed so many systems and what their impact appears to be on the Corps as an organization.

Large numbers of systems were developed to handle each of the narrow functional areas because they were more manageable. In the beginning, manual systems were converted directly into automated processes. As knowledge of automated systems increased, as new equipment became available, and as existing procedures were more carefully analyzed, new and better systems were designed.

Now, after a decade of computer experience and with the introduction of the third generation of computers, the Marine Corps systems effort is being directed towards the integration of the functional systems into a total system. What the exact form of the total system will be is not fully discernible at this time. Nonetheless, it will evolve from the Integrated Information System. With its evolution organizational changes appear inevitable.

Some organizational changes have been occurring gradually. As automated systems were developed, computer installations have appeared on organization charts. Special task groups and staff elements have been created to design and manage computers and their systems. The current trend appears to be towards the creation of a centralized staff element, placed high in the hierarchy of the headquarters, that is responsible for the overall systems effort. Emphasis has been, and will still be, upon active participation of functional managers. Other structural changes in the headquarter's staff may occur. Changes in field command staffs are also likely, as are the changes in organization of units that will have automated systems to employ on the battlefield.

The ever present need of maintaining and improving combat readiness in an uncertain environment has been a major influence on Marine Corps systems development. Of equal importance has been the pressure of economy, efficiency, and more centralization within the Department of Defense. To achieve the required state of combat readiness the Marine Corps must compete for appropriations on the basis of its efficiency. Thus, whatever the need or pressure, the results have been that automated systems are needed, and being developed, to achieve combat readiness efficiently.

Despite the emphasis upon financial management systems, such systems by themselves cannot manage the Marine Corps. They will always play an important role, but the development of a total system should be an important step towards ensuring that proper consideration is given to the qualitative as well as quantitative factors by the decision makers.

Each system will have an indelible impact on how the Marine Corps is managed. The professional knowledge required of all Marines will have to include an understanding and appreciation of the processes and techniques of automated systems. Less numbers of Marines will be involved in performing routine clerical tasks. It is apparent that Marines, who aspire to reach the top echelon of the Corps, will have to become well versed in management techniques and systems.

It has been said that the raising of the American flag over Iwo Jima assured the existence of the Marine Corps for the next two hundred years. Be that as it may, the development of systems for improving the management of the Corps and the ultimate development of a total system seem likely to play a more significant role in the life of the Corps. Certainly its survival depends on its being the kind of force-in-readiness that the time and situation require.

Paragraph 7 of Department of the Navy, General Order No. 5, Assignment and Distribution of Authority and Responsibility For the Administration of the Department of the Navy.

7. *The Commandant of the Marine Corps* is the senior officer of the United States Marine Corps. While matters which directly concern the Marine Corps are under consideration by the Joint Chiefs of Staff, and with respect to such matters, the Commandant has coequal status with the members of the Joint Chiefs of Staff. He is responsible for keeping the Secretary of the Navy fully informed on these matters. In this capacity, he is responsible under the President and the Secretary of Defense for duties external to the Department of the Navy as prescribed by law.

a. Internal to the administration of the Department of the Navy, the Commandant of the Marine Corps, under the Secretary of the Navy, shall command the United States Marine Corps, which shall include Headquarters, United States Marine Corps, the Operating Forces of the Marine Corps, Marine Corps Supporting Establishments, and the Marine Corps Reserve. He advises the Secretary of the Navy on matters pertaining to the Marine Corps. He is directly responsible to the Secretary of the Navy for the administration, discipline, internal organization, training, requirements, efficiency, and readiness of the Marine Corps; for the operation of its material support system; and for the total performance of the Marine Corps. He is also responsible to the Secretary of the Navy for the utilization of resources by and the operating efficiency of all activities under his command. When performing these functions, the Commandant of the Marine Corps is not a part of the command structure of the Chief of Naval Operations. However, there must be a close cooperative relationship between the Chief of Naval Operations, as the senior military officer of the Department of the Navy, and the Commandant of the Marine Corps, as the one having command responsibility over the Marine Corps. The Commandant of the Marine Corps is directly responsible to the Chief of Naval Operations for the organization, training, and readiness of those elements of the Operating Forces of the Marine Corps assigned to the Operating Forces of the Navy. Such Marine Corps forces, when so assigned, are subject to the command exercised by the Chief of Naval Operations over the Operating Forces of the Navy.

b. These general responsibilities include the following specific responsibilities:

(1) To plan for and determine the support needs of the Marine Corps for equipment, weapons or weapons systems, materials, supplies, facilities, maintenance, and supporting services. This responsibility includes the determination of Marine Corps characteristics of equipment and material to be procured or developed, and the training required to prepare Marine Corps personnel for combat. It also includes the operation of the Marine Corps Material Support System.

(2) To budget for the Marine Corps, except as may be otherwise directed by the Secretary of the Navy.

(3) To develop, in coordination with other Military Services, the doctrines, tactics, and equipment employed by landing forces in amphibious operations.

(4) To plan for and determine the present and future needs, both quantitative and qualitative, for personnel, including reserve personnel, of the United States Marine Corps. This includes responsibility for leadership in maintaining a high degree of competence among Marine Corps officer and enlisted personnel in necessary fields of specialization through education, training, and equal opportunities for personal advancement; and for leadership in maintaining the morale and motivation of Marine Corps personnel and the prestige of a Marine Corps career.

(5) To plan for and determine the needs for the care of the health of the personnel of the Marine Corps and their dependents.

APPENDIX II

DETAILED STATEMENT OF MISSIONS OF VARIOUS DEPARTMENTS AND DIVISIONS OF HEADQUARTERS, U. S. MARINE CORPS[1]

. . . The Assistant Chief of Staff, G-1 (Manpower Coordinator) is responsible to the Commandant for formulating plans, policies, and instructions regarding manpower and personnel matters necessary to implement the Commandant's policies and decisions.

. . . . . .

. . . The Assistant Chief of Staff, G-2, is responsible for the formulation of plans and policies pertaining to intelligence, counterintelligence, signal intelligence, communications security and electronic warfare.

. . . . . .

. . . The Assistant Chief of Staff, G-3 establishes the operational requirements for, and supervises the development of, in coordination with the other services, doctrines, tactics and techniques employed by landing forces in amphibious operations; coordinates the formulation of policies, plans, and programs for the organization, training, mobilization, and demobilization of all components of the Marine Corps; supervises the training and combat readiness of the Fleet Marine Forces (less Aviation); develops, coordinates and supervises the execution of the historical program of the Marine Corps (less Marine Corps Museums); coordinates planning within Headquarters Marine Corps for mobilization and continuity of government; supervises the competitive marksmanship and ground operational photographic (less intelligence) activities of the Marine Corps. Develops, coordinates, and supervises the execution of the Civic Action Program of the Marine Corps.

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. . . The Assistant Chief of Staff, G-4, under the direction of the Commandant, is responsible for Marine Corps logistic plans and policies; determination of

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[1]Extracted from Headquarters Order P5000.3A, Headquarters Manual, Volume II.

requirements, program objectives and programs relating to materiel readiness. He determines the materiel requirements and materiel program objectives of the Marine Corps. He plans and establishes requirements for research and development efforts in the area of logistics, and is responsible for the development of ground materiel equipment required for support of amphibious operations. He coordinates budget activities relating to the Procurement appropriation and the Operation and Maintenance appropriation. He formulates plans and policies relating to the development, operation, maintenance and expansion of Marine Corps facilities and installations to ensure their ability to support peacetime and mobilization requirements. He coordinates matters relating to international standardization. He establishes and coordinates the Marine Corps development of landing force requirements to support to Navy's amphibious force levels and shipbuilding programs.

. . . . . .

. . . The Fiscal Director of the Marine Corps is responsible to the Commandant of the Marine Corps for the formulation of fiscal policy and for fiscal and disbursing administration in the Marine Corps, to the end that fiscal and disbursing actions, policies, and procedures of the Marine Corps will be in conformity with law, good business practice, and applicable policies, procedures and regulations issued by higher authority.

. . . . . .

. . . The Director of Personnel, Marine Corps, under the direction of the Commandant, is responsible for: the procurement and administration of officers and enlisted personnel of the Marine Corps; the distribution, appointment, promotion, retirement, discipline and discharge of commissioned officers, warrant officers and enlisted personnel, and for their welfare; adjudication of personal claims; casualty processing; maintenance of officer and enlisted personnel records; and for coordination of requirements for data from the Personnel Accounting System which are needed for personnel operations.

. . . . . .

. . . The Director, Marine Corps Reserve, formulates and recommends to the Commandant of the Marine Corps plans and policies for the Marine Corps Reserve and is responsible to the Commandant for the execution of approved plans and policies for the organization, training and administration of the Marine Corps Reserve.

. . . . . .

. . . The Quartermaster General is responsible for the management of the Marine Corps Supply System; the acquisition, construction and leasing of facilities; technical inspection, maintenance, alteration, and disposition of facilities, including real estate, public works, and utilities at installations under the Commandant's management control; and is the Marine Corps Stock Fund manager.

. . . . . .

. . . The Director, Administrative Division, plans, coordinates, and supervises administrative and management services in support of internal Headquarters Marine Corps activities and, within the scope of established policy, furnishes Marine Corps field commands guidance and support in the areas of management engineering, industrial relations, and publications and printing.

. . . . . .

. . . The Director, Policy Analysis Division, assists the Commandant by maintaining continuous examination of current or projected Marine Corps policies for continuity, coordination, and timeliness, and submitting recommendations for changes in policy as appropriate.

. . . . . .

. . . The Director of Information is the direct representative of the Commandant of the Marine Corps in all matters of public information and is responsible to the Commandant for the Informational Services Program of the Marine Corps.

. . . . . .

. . . The Inspector General is responsible for the conduct of inspections, investigations, and audits of nonappropriated funds, as directed by the Commandant of the Marine Corps.

. . . . . .

. . . The Director, Data Systems Division is responsible to the Commandant for the development of objectives, concepts, policies, plans and programs, and for exercising program control over data automation activities. The Director further serves as the Marine Corps focal point for coordinating the development and approval of data systems and for obtaining approval of related automatic data processing equipment from higher authority.

. . . . . .

. . . The Director, Marine Corps Command Center (MCCC), under the direction of the Chief of Staff and in support of the Commandant and the Headquarters Staff, plans for and supervises the operation of the Marine Corps Command Center in accordance with the policies and prerogatives of the Commandant and in consonance with principles outlined in Department of Defense directives pertinent to the World Wide Military Command and Control System (WWMCCS).

APPENDIX III

FUNCTIONS OF VARIOUS DEPARTMENTS AND DIVISIONS OF HEADQUARTERS, U. S. MARINE CORPS

Deputy Chief of Staff (Administration)[1]

1. Acts for the Chief of Staff in matters involving violations of security of classified material.
2. Reviews and approves General Officer and Division Head leave and TAD requests.
3. Reviews reports and recommendations of the SWAG Board and forwards to CMC.
4. Reviews and signs congressional correspondence requiring General Officer signature when originated within an office where no signatory authority exists.
5. Reviews replies prepared to congressional correspondence for the signature of the Commandant when reply is of an unusual or sensitive nature.
6. Reviews items proposed for the periodic report to the White House, selects items by title, and signs and forwards the report to the Secretary of the Navy.
7. Signs Headquarters Directives and Marine Corps Orders and Bulletins not involving policy which have been submitted to the Chief of Staff for signature.
8. Designates speakers and CMC representatives for special occasions.
9. Arranges for VIP briefings of non-operational nature and represents the Chief of Staff as required on briefing teams when any VIP's are briefed.
10. Has cognizance over local special events, ceremonies, etc.
11. Reviews final reports of the Awards Board and makes recommendations for final action to the Chief of Staff.
12. Reviews reports of the Enlisted Performance Board prior to submission to CMC for approval.

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[1]Extracted from U. S. Marine Corps, Headquarters Bulletin 5000, dated September 1, 1966, Missions/Functions Assigned DC/S (Administration).

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13. Reviews and makes recommendations on Permanent Marine Corps Uniform Board reports.

14. Reviews and makes recommendations concerning civilian personnel actions submitted to the Chief of Staff.

15. Reviews draft FMFMs and provides appropriate recommendations to the Chief of Staff.

16. Reviews and, as appropriate, makes recommendations to the Chief of Staff on matters involving the Non-Appropriated Funds Board.

17. Performs other duties as directed by the Chief of Staff.

Director, Management Analysis Group[1]

1. Represents the Chief of Staff in the execution of his responsibilities in the development and administration of the Department of the Navy Management Information Systems.

2. Supports the Chief of Staff in the execution of his responsibilities in the development and administration of the Department of the Navy Management Systems and Sub-Systems.

3. Represents the Chief of Staff in direct liaison with the Office of the Special Assistant to the Secretary of the Navy, the Office of Management Information, and the Department of the Navy Management Information Center in all matters relating to management and information systems.

4. When required, in coordination with the cognizant staff agencies, reviews and analyzes management and information system proposals generated by Marine Corps field activities, the Headquarters Marine Corps staff, other offices within the Department of the Navy, and other outside sources (to include civilian agencies), in order to advise the Chief of Staff as to compatibility of the proposals with the overall Marine Corps management and information systems.

5. Provides the focal point at Headquarters Marine Corps for coordination of management and information matters, and of external inputs and responses to the Office of the Secretary of Defense, and to the Management and Information Offices of the Department of the Navy. Maintains contacts with outside agencies as required.

6. Supervises and monitors the development and coordination of the Marine Corps Integrated Information System.

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[1]Extracted from U. S. Marine Corps, Headquarters Order 5401.1, Establishment of Management Analysis Group, Office of the Chief of Staff.

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7. Stays alert for proposed future systems and subsystems, and for improvements to existing systems, and appropriately advises the staff and the Chief of Staff.

8. Coordinates the staff actions required to develop and maintain problem area data for use by the Department of the Navy Management Information Center (MIC).

9. Coordinates staff preparation of point papers, and prepares the back-up folder for use by the Commandant of the Marine Corps at the Weekly MIC briefing for the Secretary of the Navy.

10. Coordinates Headquarters Marine Corps inputs to and monitors the Navy Program Progress Report.

11. Coordinates the development and presentation of Marine Corps management problems in the Department of the Navy Management Information Center.

12. Provides a Marine Corps representative at the weekly preliminary MIC briefing and debriefing.

13. Monitors and advises the staff and Chief of Staff on requirements for training and education of officers, enlisted men and civilians in management and information systems matters.

Management Engineering Branch, Administrative Division[1]

a. Provides consultation on management systems, methods, procedures and techniques to achieve more economical management operations and to eliminate overlap, duplication and unproductive work efforts.

b. Conducts analytical research to provide timely and effective solutions to management objectives.

c. Analyzes existing and proposed recordkeeping systems to improve the operating efficiency of Headquarters Marine Corps.

d. Reviews requisitions for plant property office equipment at Headquarters Marine Corps as required; conducts feasibility studies; and provides technical advice on office equipment.

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[1]Extracted from U. S. Marine Corps Headquarters Order P5000.3A, Headquarters Manual, Volume II.

e. Administers the Marine Corps Management Improvement Program; analyzes reports received on Management Improvement; maintains currency of Marine Corps Management Engineering publications.

f. Administers the Marine Corps and Headquarters Marine Corps Records Disposition Programs; maintains currency of instructions for disposition or retention of records; and arranges for transfer of inactive records to Records Centers or National Archives.

g. Evaluates Marine Corps-wide requests for microfilming equipment and proposals for microfilming projects.

h. Administers the Marine Corps Forms Management Program; analyzes requirements and feasibility for all forms; eliminates duplication and effects consolidation; develops forms which are functionally designed, economical to reproduce, and technically suitable for specific and general use.

i. Administers the Marine Corps Reports Management Program; conducts analysis of all reports, determining need for and feasibility of execution; eliminates duplication, overlapping, and unnecessary reporting; reviews and consolidates reports; and provides continuity for the Marine Corps Reports Screening Committee. Maintains and publishes current listing of recurring reports quarterly.

j. Administers the Headquarters Committee Management Program; maintains current list of committees and publishes annually the Headquarters Marine Corps Directory of Boards and Committees.

k. Maintains accuracy and currency of paragraphs 5200, Management Improvement and 5420, Marine Corps Boards, of the Marine Corps Manual.

l. Maintains liaison with other government activities and private industry in the fields of management.

Director, Data Systems Division[1]

a. Coordinates and supervises the development of the Marine Corps Integrated Information System to provide timely and meaningful information to appropriate decision making and operating levels.

b. Assists, advises, and acts for the Commandant of the Marine Corps in all matters pertaining to automated data systems.

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[1] Ibid.

c. Responsible for overall administration, operation, technical supervision, and coordination of the Marine Corps Automated Data Systems Program.

d. Prepares, coordinates, and presents for the Commandant's approval a recommended Marine Corps position on joint automated data systems matters.

e. Provides for interstaff, interservice, and intra-Marine Corps liaison on matters of automated data systems.

f. Furnishes advice and assistance to Marine Corps boards, committees, working groups, and operating agencies of this Headquarters on data systems matters with scientific, technical or research implications.

g. Formulates, in coordination with appropriate staff agencies, research and development requirements in the field of automated data systems.

h. Develops and supervises data automation cost and utilization data for command analysis and action.

i. Coordinates the formulation and justification of budget estimates and supporting submissions for Marine Corps data automation requirements.

j. Performs system analysis functions pursuant to the study, evaluation and recommended improvements in operations to include: analysis of an operation as presently performed with an examination of the source data inputs, resultant outputs, and the complete processing procedures by which the outputs are derived; an objective procedure evaluation and the operational improvement of the present system based on the required functional objectives of the operation; the design of a proposed system utilizing data automation techniques to include hardware selection.

k. Maintains technical cognizance over personnel in Occupational Field 40, including recommendations as to their authorization in manning documents and their training; prepares recommendations concerning their classification, qualifications, and assignment plans; and recommends Occupational Field 40 changes to MCO P1200.7, MOS Manual.

l. Provides technical assistance in the management of automated data systems instruction conducted by HQMC-sponsored formal schools; recommends required factory training courses; recommends and monitors production of training devices required for automated data systems schools; monitors and recommends allowance of instructional support items, publications, and test equipment; reviews applicable Marine Corps Institute Courses.

m. Reviews needs for contract civilian data automation equipment engineers and technicians; makes appropriate recommendations.

Assistant Director for Management Systems Development, Data Systems Division[1]

a. Acts for the Director, Data Systems Division on management systems development matters wherein policy has been established.

b. Recommends to the Director, Data Systems Division changes of major importance to include those affecting the establishment of policy.

c. Determines through functional staff agencies, the information requirements of the Marine Corps.

d. Provides technical assistance in the standardization of data elements and data codes program.

e. Promotes the use of automated systems in applicable areas to increase the availability of data for management and control purposes and to develop the economic limits thereof.

f. Evaluates advancements in the use of computers for management and control purposes.

Director, Marine Corps Command Center[2]

a. Establishes operating procedures for and supervises the operations of a Headquarters Marine Corps facility which:

(1) On a 24-hour basis, maintains communications linkage with the National Military Command Center and its alternates, other service Command Centers, the Command Centers of the United and Specified Commands, and all major Marine Corps installations.

(2) Through coordination with other Headquarters agencies, provides rapid and knowledgeable Marine Corps response to the requirements of the WWMCCS, to include requirements with respect to the JCS Emergency Actions procedures.

(3) Serves as a focal point for staff effort during periods of increased military alert or emergency when rapid communications, secure briefing/conference facilities and 24-hour operations are required.

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[1] Ibid.

[2] Ibid.

(4) Through coordination with other Headquarters agencies, supports the Commandant and his staff by acquiring, maintaining, displaying and disseminating, as appropriate, information pertaining to the current status of Marine Forces relative to personnel, training, logistics, and overall combat readiness.

(5) Serves as a repository for reference data and contingency and other plans which will assist the Commandant and his staff in reaching decisions and taking timely actions related to Marine Corps service responsibilities.

(6) Monitors on a 24-hour basis all messages incoming to Headquarters Marine Corps and, through coordination with appropriate staff action officers and agencies, assists in the initiation of appropriate and timely action required by messages delivered to Headquarters Marine Corps outside of normal working hours.

(7) Publishes daily a written brief of incoming messages considered of interest to the Commandant and his staff.

(8) Outside of normal working hours and when directed, provides situation and spot reports, summaries and briefings pertaining to matters of significant and immediate interest to the Marine Corps.

(9) Maintains an appropriately staffed and equipped facility to provide rapid preparation and display of visual aids to accompany briefings in the MCOC.

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